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BY

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DEDICATION.

TO

John Henry Bridges,

UNDER WHOSE GUIDANCE

THE METROPOLITAN WORKHOUSE INFIRMARIES,

THAT INVALUABLE PROVISION FOR THE LONDON POOR,

WERE FOUNDED AND ORGANISED;

AND WHOSE MANY ACTS OF KINDNESS

HAVE EARNED THE LASTING ESTEEM AND REGARD OF

The Author.

PREFACE.

THE first of these lectures was delivered as part of the post-graduate course which was organised at the Paddington Infirmary in the year 1891. All the other lectures were delivered at the Welbeck Street Hospital for Diseases of the Nervous System, during the years 1897-8, and formed part of the post-graduate course of lectures delivered by different members of the staff. Some of them appeared in "The Clinical Journal"; and it was at the suggestion of several friends that they are now collected and published.

I more readily acceded to their suggestion for three reasons. In the first place, I wished to appeal to a wider audience on a topic always interesting to me, namely, the wealth of clinical material—especially of mental and nervous disorders—in the Metropolitan Workhouses and Infirmaries. Secondly, it has always seemed to me that the profession has taken an unjustifiably hopeless view concerning the curability of diseases of the nervous system in general, and of the so-called functional disorders, which form so large a part of them in practice, in particular. And, thirdly, it is surely a mistake that the study of neurasthenia, and the methods of coping with the various, and often trivial, symptoms which these patients present, should be omitted from current text-books. As a result of this, not only do many curable patients go unrelieved, but a good number have recourse to charlatans.

In preparing these lectures for the press the details of the cases have been considerably amplified, their number supplemented, and the whole has been carefully revised as it passed through the press. Exception may be taken to an absence of reference to the views and works of others. But these lectures do not aim to being anything more than a record of personal experience. The omission—if the absence of such references can be counted an omission in clinical lectures—is remedied to some extent by an Addendum and Bibliography, which has been prepared, under my supervision, by Miss Agnes Blackadder, M.B., to whom I am also indebted for valuable assistance in the work of revision. Without her aid they would probably not have seen the light for many years to come.

Upper Berkeley Street, W.
March, 1899.

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LECTURE II.

ON NERVOUSNESS OR NEURASTHENIA.

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LECTURE I.

INTRODUCTORY.

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GENTLEMEN,—In addressing you at the commencement of the Post-graduation clinique now organised for the first time within the walls of a Poor-Law Infirmary, it is desirable I should say a few words explanatory of this new departure.[1]

First let me pay a tribute to the enlightenment of the

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[1] A visiting surgeon, Mr. (now Sir Henry) Thomson, was appointed, I believe, to the Marylebone Workhouse about the middle of this century, but the date of this lecture (May, 1891) was the first occasion on which Workhouse Infirmaries were ever rendered available for organised clinical and pathological instruction. It was always thought that the Amending Act (1869) of the Metropolitan Asylums Act (1867) forbidding clinical instruction, applied to Workhouses, but I was enabled after a lengthy correspondence with the Local Government Board, to establish the fact that the Metropolitan Poor-law Infirmaries had been erected under the Workhouse Extension Act of 1845, and consequently the other Act forbidding clinical teaching did not apply.

Board of Guardians of this Parish, who recognised the value of this procedure, not only for the sake of the patients whose cases we shall study, and whose cure and alleviation is thereby rendered more speedy and certain, but who also realised the saving of expense to the ratepayers, who provide the means for the maintenance of these institutions; because it may be taken as certain that whatever, without undue expense, shortens the stay of a patient in the infirmary, is the truest economy to the parish.

But, gentlemen, these are not the only advantages likely to be derived from the course of instruction which it is proposed to carry on within these walls. Where is there to be found such a vast clinical storehouse as exists in the Poor-Law Infirmaries of the Metropolis? Both in point of number and variety of the cases I venture to think they are, when taken collectively, unequalled in the history of the world. They contain an aggregate of 13,332 beds—not counting the sick-wards nor the infirm persons who still remain in some workhouses—as against only 10,883 in all the Special and General Hospitals of London. Where, I would ask, is there to be found such a wealth and variety of material as here exists? In this, the Paddington workhouse and infirmary, there are close upon 600 beds available for the reception of every kind of mental and bodily ailment that flesh is heir to. To render this available for medical teaching is undoubtedly a great gift to the Profession, and through it to the public, who necessarily gain indirectly by improved medical education. I have never ceased to enunciate these views, and you can well imagine with what satisfaction I see the realisation of my desires by the liberality and foresight of the Board under whom I have the honour to serve.

This large group of buildings comprises three departments, under the government of one Board of Guardians. In the new infirmary, where we are now situated, there are 284 beds, 32 of which are for the reception of sick children, 16 for cases needing isolation, and the rest for acute and severe cases of disease of different kinds, both medical and surgical. The old infirmary (*i.e.*, the sick wards of the workhouse) next door, comprises 310 beds, 10 for lying-in cases, 20 for mental cases, which are constantly passing through the workhouse, and the rest for various kinds of chronic ailments. Finally, there is what is erroneously called the "able-bodied" department of the workhouse, which really contains infirm persons of both sexes, too old or too infirm to do much beyond a little needlework or wood-chopping. These old people are very frequently affected by the minor ailments incidental to advanced life, and daily seek the doctor's aid in considerable numbers. The labour-yard where idle able-bodied persons are set to accomplish a daily task of stone-breaking or picking oakum, is situated elsewhere under a separate administration. Thus, in this institution there is a population of over a thousand persons, subject to every conceivable kind of ailment, presenting to the student a veritable page from the book of nature, where he can study the commoner and more chronic ailments which will make up such a large portion of his practice when he launches out into the world on his own account, such as bronchitis, chronic rheumatism, the parturient state, paralysis agitans, vaccinia, slight mental disorders, and so forth. A few perhaps of the rarer acute disorders may sometimes be wanting, because these are specially selected for admission to the hospitals. But on the other hand, what a magnificent field for the observation of arterial disease and nervous and mental disorders about which the student is generally so ignorant at the end of his career.

Among the inmates of the *workhouse* proper, we are able to study the slow beginnings of disease, and such ailments as migraine, neuralgia, "senile syncope," "senile vertigo," "senile epilepsy," arterial sclerosis, and a large number of epileptics. In the *sick wards* of the workhouse (*i.e.*, the "old infirmary") may be seen numerous chronic ailments, such as tabes dorsalis, paralysis agitans, cerebral softening, hydrocephalus, and various forms of paralysis which have settled down into a chronic condition, as well as chronic rheumatism and gout. Among the patients of the *new infirmary* we find those who have been seized with apoplexy, hemiplegia, anterior poliomyelitis, the later stages of cerebral tumour, disseminated sclerosis, chorea, peripheral neuritis, and various other acute nerve diseases, together with all the many and varied manifestations of hysteria, in addition to acute pneumonia, phthisis and the like.

The field, therefore, offers special opportunities for the study of nervous, cardio-vascular, and senile conditions, but it is in relation to mental ailments of all kinds that the most unique opportunities for study occur, an opportunity such as, I venture to think, exists in no other circumstances whatever. The accommodation of the lunacy wards proper are, as we have seen, only twenty in number, but through these wards pass all the lunatics and *alleged* lunatics[1] of the parish, of no matter what kind, on their way to other parts of the building, to an asylum (lunatic asylum) or to an imbecile asylum. It is true that in the County asylums one can study from day to day the various forms of chronic insanity, but there one misses the beginnings of mental alienation, and its slighter forms, such as that frequent condition, transient alcoholic mania, and that large and nondescript class of mental ailments which I have designated "neurasthenic insanity." These cases are eminently curable if recognised and taken in hand at an early stage; and they are far more numerous than is generally supposed, and than the graver cases which necessitate removal to the asylum, for out of five or six brought into the workhouse, not more than an average of one passes on to the County asylum. Moreover, in a lunatic asylum one cannot see the imbecile and idiot class and the slighter mental ailments incidental to old age. All of these various classes can be seen and studied at one time either separately, or *in groups* in this institution, either in the lunacy wards or in one or other departments of the building. Where, I would ask, is there such an opportunity for studying disease of every kind, in every stage, and in every degree?

But there is yet another advantage in the conditions around us. In a hospital, on account of the alleged paucity of beds, the patient's stay is always limited by the Board of Management; usually to a maximum of three months. But in these infirmaries a patient remains indefinitely, unless he voluntarily leaves, or dies. Under these circumstances, therefore, a case can be followed out in its entirety during life, no matter how chronic or prolonged its course may be, and after death it may be followed into the dead-house—that most important adjunct to clinical work. In this way an unrivalled opportunity presents itself for the study of the anatomy of all the commoner as well as the rarer chronic affections; and especially of some of those prolonged cases of chronic nervous disorders about which we know so little. Many of such cases—cases of primitive myopathy for instance and various chronic meningeal affections—after going the round of the London hospitals, drift inevitably into some poor-law infirmary, and there die. I am well aware that it may be urged, on the other hand, that the out-patient department of a general hospital contains examples of most of the common and chronic ailments. This may be true, but everyone knows how difficult it is to adequately study or treat such cases, on account of that unknown, yet confusing, factor, the patient's home surroundings. Moreover, on account of the uncertainty and irregularity of their attendances it is extremely difficult to follow the natural course of the disease; and the possibilities of obtaining autopsies are few and far between.

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[1] This term is applied to a person during the fourteen days he can be legally detained for purposes of observation so that the doctor may then decide how he should be disposed of.

Such then, gentlemen, is the ample material which is ready to our hands, material for the studies to which I have the honour to invite your co-operation. The only imperfection of the situation is the paucity of workers, students old and young, qualified or unqualified; but when I look at the numerous audience here to-day, I cease any longer to have any fears on this score.

Plea for Specialism.—In view of the special opportunities in that direction afforded to us in this institution, we shall limit our investigations as far as may be convenient to disorders of the nervous system, though without excluding the other systems of the body, and especially the cardio-vascular system, with which the nervous system is so closely and intimately associated in several ways. Possibly, the question may be raised whether disease of the nervous system is a legitimate and desirable speciality. Now, this criticism might perhaps be just in regard to narrower domains, where the justification for specialism largely, if not entirely, rests upon the fact that exceptional experience is required for the necessary technique of treatment. But in a subject so vast, so unknown as that of the nervous system, so intimately connected with all the other systems, specialisation surely needs but little justification. Consider for a moment the point which I just now referred to, the close association of the nervous and cardio-vascular systems. The latter supplies the nervous system with nutrition and oxygen, as it does the other systems, but, more than this, an association exists which does not obtain in other instances, which has most far-reaching effects. I refer to the control which the nervous system exercises over all the organs of the body through the mediation of the cardio-vascular system. The importance of the sympathetic portion of the nervous system in this respect cannot be over-estimated; yet it is practically a sealed book. On account, therefore, of the vastness of the subject, its difficulty and intricacy, no less than the special opportunities afforded by this Infirmary, it is unnecessary to say more in justification of constituting the study of diseases of the nervous system a legitimate speciality.

Methods of Research and Clinical Investigation.

Let us turn for one moment to the various methods of research adopted in the investigation of the pathology of the nervous system. It is usual to mention four methods by which neuro-pathology has at different times become advanced. First, a study of *embryology* and development teaches us a good deal concerning the course of the fibres and the anatomical relations of the different parts of the central nervous system.

Secondly, the functions of the different portions of the brain and the relation of the several columns in the spinal cord to one another has often been revealed by means of the *secondary degeneration* which takes place whenever the peripheral part of a nerve fibre is cut off from its central cell of origin.

Thirdly, *experiments on animals* and observation of their symptoms during life, followed by their subsequent dissection after death, has been the means of affording us valuable information, especially on the Continent, where it is not hampered by the restrictions which are placed on vivisection in England.

Fourthly, there is what may be called the *anatomo-clinical method*, which consists of the careful and minute observation of cases of injury or disease of the nervous system during life, and their detailed examination, both macro- and microscopical after death. This method is the only one available in this institution, but I venture to think that, although it is necessarily a slow and laborious process, it is the one which gives the best and truest results. All the other methods must be submitted ultimately to the control and test of this method. In our investigations here we shall always have before us a case of some kind, the diagnosis, prognosis, and treatment of which is our primary object. However, gentlemen, let it not be forgotten that practical medicine of a rational kind must always be based on anatomy and physiology; and as we go along I shall hope to draw some profitable lessons from facts derived from the other methods above mentioned.

Fifthly, we have the *Method of Analogy*. There is yet another means of research in diseases of the nervous system, really a modification of the last named, and which has not, as far as I am aware, been included amongst the recognised methods, though it has doubtless been utilised, perhaps unconsciously. It is one which is especially applicable to diseases of a functional order, and under the very circumstances in which we find ourselves, namely, where so large a number of patients is available that illustrations of almost any kind of disorder can be readily found for purposes of comparison, one with another, from a clinical point of view. The method consists of grouping a large number of cases together which have marked clinical resemblances in their course and symptoms, and including amongst them one or more cases in which the anatomy and pathology are known. Then by the study of these, and the drawing of inferences from the known cases to the unknown, we may throw considerable light upon the latter. In my own mind I have named this procedure "the method of analogy," since it depends upon the study of analogous cases. The subject of muscular tremors and clonic spasms will illustrate what I mean. In some cases belonging to this large and important group, the anatomy and pathology is fairly well established, but in the greater number these are purely a question of conjecture. We shall, I hope, be enabled, by the employment of this method, and by grouping the cases into suitable classes, to draw some important conclusions as to the pathology of the functional varieties of tremor and clonic spasm.[1]

Clinical Investigation.—All that has just been said refers to research, and it may be concluded that, although we have as yet no laboratory here, nevertheless we can study pathology in its clinical aspect; and you will have gathered that I regard the method of analogy as the one best adapted to this kind of research.

But cases need investigation from another point of view, for purposes of diagnosis, prognosis, and treatment; and this brings us to clinical investigation proper. Here the first thing to do is to get out *the facts of the case*, and it is advisable to adopt an uniform method; namely:—First to note the patient's most important, his leading, symptom; secondly, to elicit the history of the illness, his previous history, and his family history; and, thirdly, to proceed to the physical examination. For this purpose I am in the habit of using the list I show you here,[2] so that no detail may be omitted, inasmuch as the human memory, after all, is finite.

Now, having done this, the general plan is to erect an artificial diagnosis, and see if the case corresponds with it. This method may answer well enough if the case conforms to one of the few types admitted into the domain of Neurology, and if the case be a well-marked typical one, such, for instance, as chorea, epilepsy and the like; though even in these instances a large number of other diseases are attended by clonic spasms or convulsions. Comparatively few cases of nerve disease, however, do conform to a type, and, moreover, we always have to make out two things concerning every case—the *locality*, and the *nature* of the lesion.

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[1] See Lectures viii. ix. and x.

I believe, therefore, that the best way, both for purposes of diagnosis and for purposes of research, is to take the locality and the nature of the lesion separately. (*a*) For the

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[2] SCHEME FOR CASE-TAKING (NERVOUS SYSTEM).

Motor System.
- Power of walking—Dynamometer—Evidences of weakness—Six Movements, flexion, extension, adduction, abduction, rotation, circumduction.
- Stiffness or Flaccidity.
- Volume (Nutrition).—Electrical changes.
- Tremors—Clonic spasms.
- Co-ordination—(and muscular sense).
- Reflexes, Deep and Superficial—Ankle clonus.
- Nerve-trunks—Pain (neuralgia)—Tenderness—Electrical reactions.

Sensation. (Increase or Diminution.)
- Touch—Pain—Temperature—Localisation—Any delay.
- Muscle-sense—(*a*) appreciation of position of joint, and difference of weights; (*b*) Localisation of position of other limb.

Cranial Nerves, and Special Senses. (Acuteness and subjective sensations.)
- Smell—nasal cavities.
- Vision—Pupils—Fundi—Ocular muscles.
- Facial movements—Sensation of face.
- Hearing (aerial and per-osseous)—Meatus.
- Tongue—Movements—Sensation—Taste (tip and edges; posterior part and palate, each side).
- Palate (movements and sensation).
- Deglutition—Pharyngeal reflex.

Brain.
- Speech—Agraphia, aphemia, word-blindness, word-deafness.
- Memory—Attention—Intellect—Emotions—Will—Delusions—Hallucinations.
- Headache—Tenderness—Vertigo—Vomiting.
- Consciousness—Delirium.
- Fits (convulsive or syncopal)—Hysterogenic zones.

Sympathetic (symptoms paroxysmal or periodic).
- Involuntary muscular system—Incontinence of urine or fæces.
- Flush storms—Pallor—Pulse—Colour and Temperature of limbs.
- Obscure sensations (Formication—pins and needles, &c.).
- Dyspnœa (*e.g.*, Cheyne-Stokes)—Palpitation.
- Trophic Lesions—Bed-sores—Joint-changes—Eruptions—Perforating-ulcers.

diagnosis of the locality we should take the patient's leading symptom, and see what position best explains this and the other symptoms, discussing the several positions which might account for all the symptoms. A knowledge of anatomy and physiology is necessary for this, and it is therefore to be regretted that neurology is generally relegated by the medical student to his post-graduate studies. However, the task is not such a formidable one as might be thought, for the prominent symptoms are usually few, and their explanation simple. (*b*) As regards the *nature* of the lesion, this is generally a simpler matter, for you may group all lesions into destructive or irritative, and organic or functional, either of which latter may be destructive or irritative. There are four features which will help us to come to a conclusion on this point. First, the position of the lesion having been decided is some guide, as in cases of hemiplegia for instance, we know that only a few lesions affect the internal capsule. Secondly, the mode of onset of the case is important; circulatory lesions coming on suddenly, degenerative lesions slowly. Thirdly, the character of the symptoms affords important information, since destructive lesions of the motor tract, for instance, produce paralysis, whereas irritative ones produce convulsions and rigidity of the same parts. Fourthly, the age of the patient is perhaps as important as any, for, to a very large extent, certain lesions are confined to certain age periods.

These are the most important clues that I can give you at the present time. But there is one most satisfactory consideration. In the wards of a general hospital it is hardly possible to employ any one method sufficiently for it to become established in our minds; whereas here the number of nerve cases is so large that by repeated exercise we can easily and readily come habitually to employ the best and most successful method.

Pathology of "Functional" Disorders of the Nervous System.

In referring just now to the anatomo-clinical method of research, I pointed out the necessity of employing both clinical observation at the bed-side and observation in the *post-mortem* room. Both are necessary for the complete observation of a case. Now, unfortunately, in diseases of the nervous system there still remain a large number of disorders in which *no anatomical changes can be found after death, either naked-eye or by means of the microscope,* which can account for the symptoms during life. These are known as functional disorders; this is the usually accepted definition, albeit of a negative kind, of the term functional; and at the present time—I say it with regret—these constitute the majority of the cases of disease of the nervous system which come before us. In this group we are still compelled to include such common affections as epilepsy, migraine, hysteria, neurasthenia, chorea, and many other conditions. However, there is still a good deal to be learned about these diseases by their investigation during life. By employing the "method of analogy" I hope with the large field at our disposal that our studies may be fruitful, even in this the most difficult domain of medical science. But it is desirable, at the very threshold of our investigations, to analyse the meaning of the term "functional disorders" a little more closely and see if we cannot arrive at some less negative qualities.

The term "functional" is very often used as synonymous with "hysterical," but it connotes, as I have said, an absence of anatomical or structural changes to account for the symptoms; and it is implied that the symptoms in such cases are due simply to an alteration of function. Well, gentlemen, this does not help us very much, for if there were not a disturbance of normal function, no abnormality, that is no symptoms, would arise. Now, it appears to me that there are at least six ways in which functional nervous disorders may arise. These I will now mention to you together with the clinical features which, in my belief differentiate them from one another.

I.—In the first place there must be a considerable number of so-called functional disorders in which some structural or chemical change exists which we have failed, by our present means, to discover. This group of diseases, therefore, diseases namely in which *anatomical changes* would probably be discovered by improved apparatus and methods, constitute the first sub-division of the so-called functional disorders. Many diseases were formerly grouped as functional before the introduction of the microscope, which since then have been known to be associated with definite structural changes. The clinical features of these, like those actually included among the organic diseases, would be a certain permanence, stability, and constancy of the symptoms, perhaps even incurability. Applying these clinical tests, by the method of analogy, we might possibly include in this group paralysis agitans, senile tremor, and certain other tremors and clonic spasms.

II.—Secondly, we must not forget that profound alterations of function may be produced by blood conditions due to *toxic substances introduced into the body from without.* The coma of typhus and typhoid fevers and the convulsions of tetanus are illustrations of the profound effect produced by the toxine evolved from a specific microbe. In this group, which we might call *hetero-toxic* disorders, we should expect the case to run somewhat the course of an acute specific fever, namely, a period of rise, a crisis, and a fall, after a more or less definite duration. The symptoms would be as symmetrical and as widespread as the blood itself. By applying the method of analogy, and grouping numbers of cases together, I have long believed chorea to be due to a specific microbe, for four reasons:—(1) It is practically confined to childhood; (2) It frequently arises by what is called "imitation" of one child by another, but what might equally well be called "infection" of one child from another. (3) The natural course of the disease and its more or less definite duration; and (4) its intimate association with scarlatina. Similarly, I believe that the early stage and acute advent of infantile paralysis might be explained in the same way.[1] We see other illustrations of this hetero-toxic group in the peripheral neuritis of beri-beri, and that due to alcoholic excesses; probably also several other kinds of peripheral neuritis, and the paraplegia after fevers. All of these diseases were classed as functional before changes were discovered in the nerves, and at the present time they still belong in their early phases to the functional group.

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[1] The limitation of the lesion to the cells in the anterior horns is not against the toxic theory, because we know that lead sometimes has a specific tissue proclivity for the musculo-spiral nerves.

III.—In the same way alterations of function without, at any rate at first, structural changes, may take place by *toxic substances manufactured within the body*. In spite of the advances made in recent years in our knowledge of the chemico-vital changes which take place in the body, we are still very much in the dark on this subject. Nevertheless, we know that in the elaboration of the products of digestion, various substances, such as uric acid, normally absent, or present in the blood only in small amount, may when in excess have an evil effect upon nerve structures. Or again, it has quite recently been established that certain glands, such as the thyroid and supra-renals, pour out substances into the blood which are necessary to the well being of the individual; and if these be absent or altered in quality, morbid effects arise. In this group which might be called the *Auto-toxic* group, the clinical effects would necessarily vary with the conditions under which the toxic blood state is produced. Take, for instance, those related to the elaboration of food products. Here the clinical features we should expect to find would be :—(1) That the symptoms would come on and cease somewhat abruptly, and vary from hour to hour in severity (that is to say they would have a paroxysmal character) according to the amount of toxic matter manufactured at any particular time. (2) The symptoms would be as widespread as the blood itself, or at least symmetrical in distribution. (3) These diseases would probably be less frequent in children in whom the elaborative and metabolic processes are less easily deranged. (4) In some of them the symptoms might be related to meals. As illustrations of this group, such diseases might be mentioned as migraine, some forms of neurasthenia, and, as regards the disturbances of internal secretion, exophthalmic goître.

In both of the foregoing groups (II. and III.) it follows that if the symptoms be unrelieved, and the disease become permanent, definite structural changes may result from the continuous morbid effect of the toxic blood state.

IV.—Alteration of function unattended, at first, by definite structural changes, may arise in cases where the *nutrition of the nerve tissues* is at fault. Of course the nutrition is disturbed in the two preceding groups, but here I refer to a simple deficiency, such as arises from deficient nutritive power of the blood, as in anæmic states, or exhaustion from over-use. Here the clinical manifestations would probably come on slowly, would be of a more enduring kind than the preceding, though not so persistent and unchangeable as in organic diseases; there would be a history of the cause which produced the impoverished blood or the exhaustion; and the case would be amenable to remedies directed to the removal of that cause, and the improvement of nutrition. Illustrations of what is here meant might be found in some cases of neurasthenia (those, for instance, due to "over brain-work"), the loss of memory which occurs in anæmia, and the occupation neuroses.

V.—Serious alterations of function without structural changes may also certainly be produced by a *deficiency, or by excess, in the quantity of blood* flowing to a part, without necessarily any alteration in its quality. The quantity is, we know, regulated by those important and little-studied vaso-motor nerves which are themselves part of the nervous system. I believe, gentlemen, that in the study of this, which might be called the angio-neurotic or vaso-motor variety, lies the solution of many hitherto unsolved problems in connection with functional disorders. The clinical features here would probably, I believe, be a paroxysmal and constantly-varying character from hour to hour and day to day; with a tendency to flushings of the surface in the individual and other vaso-motor symptoms. The "attacks" which characterise this group of diseases (such for example as the syncopal attacks which are explicable by anæmia of the brain), may be followed by the passage of large quantities of pale, limpid urine; for we are now practically certain, though for a long time it was only suspected, that the amount of blood going to the head is largely regulated by the dilatation and contraction of the splanchnic area.

VI.—There is, I believe, yet another group of functional disorders of the nervous system which does not fall within any of the preceding, due to an *increased reflex irritability*, or an increased response to impressions from without, arising either from an inherent irritability of the various reflex centres, or a deficiency of the control normally exercised over the lower by the higher centres. This group of functional disorders is, I believe, almost the only one to which the name hysteria may be legitimately applied. Yet, gentlemen, it is sad to find in the present day, how frequently hysterical and functional are used as synonymous and absolutely identical terms. The clinical features we should expect to find here would be:—(1) The occurrence of some of the symptoms in the form of "attacks," determined by some external cause; (2) the disease would tend most often to arise in that sex where, and at a time of life when,.the reflex centres are normally most irritable; *i.e.*, in the young about the age of puberty; in females, especially at the time of the menopause. (3) The symptoms would vary from time to time, in degree corresponding with the variations in the irritability of the reflex centres and the normal variations in the control exercised by the higher powers. The best illustrations of this group are, I believe, to be found in the manifestations of hysteria.

These, gentlemen, are six different ways in which, I believe, functional disorders of the nervous system—those, namely, unattended with any structural changes discoverable by the present means at our disposal—may possibly be explained. At any rate these are the lines along which our researches should, in my belief, be conducted. These considerations are, it is true, largely a matter of hypothesis, legitimate hypothesis I trust; but surely, gentlemen, the time has gone by when everything functional, everything non-structural can be called by the name "hysteria."

Compound causes.—It must not be thought that these several functional causes are capable always of acting alone.

Far from it. There is almost always some predisposing factor which determines or directs the action of the poison upon the nervous system—or some particular part of it—in one patient, whereas in another patient the poison may act on a totally different organ or tissue. And this leads me, gentlemen, to enter my protest against that kind of reasoning adopted by some observers—generally those possessed of a mathematical turn of mind—who say that unless effect A is always found when cause *a* is present, *a* cannot be the cause of A. This may be true in physics, and in conditions where we meet with single causes and effects. But you will perhaps pardon me for pointing out that in medicine a pathological effect or a symptom is never the product of a single cause; we invariably have to do with a compound cause—a predisposing and an exciting one. No one, for instance, now doubts that diphtheria is the effect of a specific contagium, a microbe; but when the infection is introduced into a school full of children, many of whom are as like each other, to the casual observer, as two peas, only certain of them contract the disease. Again, only some of those who take the diphtheria afterwards develop peripheral neuritis. Now, this is undoubtedly due to some inherent predisposition in the individual, inherited or acquired, to contract the disease; and, in the case of those who develop the neuritis, some similar predisposition in the nervous system.

Simulation.[1]—Before leaving this question of the pathology of functional disorders of the nervous system, I wish to say a few words on a matter of the highest importance, namely, the simulation of organic by functional diseases. In the course of infirmary work we meet with certain malingerers, who have carefully observed a certain malady and purposely imitate it, but I do not refer to this kind of simulation, which is a fraudulent practice with an adequate motive, namely, the avoidance of work. What I mean is the remarkable way in which, for instance, a case of hysterical hemiplegia may resemble a case of hemiplegia due to hæmorrhage into the internal capsule. Indeed, in general terms, some hysterical disorders of the nervous system, for instance, mimic the respective organic disorders so closely that the term neuro-mimesis has been suggested for the former by several very eminent authorities, who regard these disorders as of purely psychical origin;[1] and who lead one to infer that these patients can cure themselves as readily as they have *presumably* produced the disease. They would have us believe that it is all a question of self-control, and that such patients are to blame for not curing themselves. Now, it is true that the sudden way in which such symptoms appear and disappear lends considerable support to these statements; but, gentlemen, I believe this view to be entirely erroneous.

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[1] *i.e.*, The resemblance between functional and organic diseases.

You will perhaps ask, how else are we to account for this remarkable similarity? In the first place, I would ask you to observe that this mimicry, if it be real imitation by such patients of a definite pathological condition, would endow them with a very remarkable intelligence, far above anything they ever really possess; for I am able to affirm, from an extensive infirmary and workhouse experience, that hysteria is quite as frequent amongst the poor and ignorant as amongst the wealthy and intelligent, if not more so. How is it possible for such patients to manufacture hemianopsia and total hemianæsthesia, sensitive and sensorial?—and even more elaborate groups of symptoms? Secondly, I have seen over and over again cases where the strongest possible motive existed for recovery, and where the greatest inconveniences had to be endured by the illness from which they suffered. I am quite prepared to admit that the emotional attacks with which they are sometimes affected, and perhaps some of their other symptoms, are more or less under control; it is so in all functional disorders, whether due to a toxic state of the blood, or early undiscoverable organic changes. But I have always maintained that the disease is as real and as disagreeable to them as an attack of scarlatina, and all who study these cases closely from day to day admit it. Finally, I believe that the true explanation of this imitation, simulation, or, as I would prefer to call it, similarity, may be explained in a manner more reasonable. It seems to me much more probable that the similarity of the symptoms is due to an involvement of the same structures in some pathological process which our present means of investigation fail to discover. I have already referred to certain features which would, in all probability, characterise nervous disorders of circulatory origin, where the pathological condition is a deficiency or irregularity of the blood supply; and what is more likely than that the symptoms due to a deficient or irregular blood supply should resemble or mimic those due to a complete cessation of the blood supply (embolism) of the same structures? We know what a delicate, or shall I say sensitive, structure the brain is, and if there be a spasm of the vessels on one side of the brain, or a flushing (such as we can very often see for ourselves in the vessels of the skin) of one hemisphere, or of one or more of the idio-motor areas, what is more likely than that paresis should result of the corresponding limbs; and that the paresis should come on suddenly, or at any rate rapidly, vary from day to day, and disappear suddenly without leaving a trace behind it?

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[1] *e.g.*, Sir James Paget: "Lectures and Essays."

Conclusion.

At the commencement I described to you the field of study which is to be found within these walls. It is truly magnificent, both in its extent and its variety, both for minor and for major ailments, for acute and chronic; and above all, for those chronic conditions about which we know so little. We shall find in this Infirmary, moreover, a peculiarly wide scope for research in those most fascinating of specialities, diseases of the circulatory and diseases of the nervous systems.

It only remains for us to do our part. I have laid before you the methods I think most useful, and especially the method of analogy, which I believe to be peculiarly fitted for clinico-pathological research. Finally, I indicated—in the unexplored domain of the so-called functional disorders of the nervous system—the lines along which our researches may be most profitably conducted.

It is necessary for us to bring to these enquiries a wide range of knowledge. It is, in the first place, no narrow speciality that I am inviting you to study. The diseases which we shall meet with are very numerous, and of almost endless variety. The symptoms are often so obscure that even the sufferers themselves find it hard to describe them; although they may constitute some of the gravest and most troublesome conditions that tax the patience of humanity. On the other hand, the problems which will come before us constitute some of the most profoundly interesting that have puzzled philosophers in all ages, concerning as they do the phenomena of the human mind. For the investigation of these various questions, all medical knowledge, no matter of what kind, all scientific information, no matter to what department it may belong, will be useful. All branches of human knowledge will be laid under contribution. But, gentlemen, I maintain that the preponderating rôle—the chief and most certain means of arriving at the truth—belongs to clinical observation and research. It is alone by these means that other methods, laboratory methods for instance, whose value I do not for one moment deny, are tested and controlled. Without clinical observation the most brilliant achievements in the laboratory must remain barren and useless; and after all, it is in clinical methods that all other methods have their application for the relief of human suffering.

LECTURE II.

ON NERVOUSNESS OR NEURASTHENIA.

SUMMARY:—*Diseases of the nervous system are more curable than is generally believed.—Great frequency of neurasthenia.—Limitation and definition of the term.—Cases.—Symptoms:—Nervousness, headache, disturbed sleep, restlessness, pains, irritability of temper, amnesia, inattention (hence the inaptitude for mental work), vaso-motor symptoms.—Pulse.—Vertigo.—Gastric symptoms.—Urine.—Temperature.—Physical signs are almost wanting.—Course and Prognosis.—Diagnosis.—Ætiology.—Treatment.*

GENTLEMEN,—In delivering the first of this series of lectures, it might be thought desirable to make some general remarks on the study of neurology. I do not propose to do this; but there is, nevertheless, one point which merits a passing reference. The point to which I wish to refer is this, that although a good many nervous disorders are chronic and resist treatment, there remains on the other hand a very much larger group which are essentially remediable. It will be noticed that this statement is somewhat at variance with the generally held opinion, but I hope to be able to show you that what I say is correct. Taking nerve diseases as a whole, the largest group of cases which come before us in private and hospital practice is undoubtedly the functional one, comprising, besides the subject of our studies to-day, migraine and other paroxysmal neuroses, chorea, and the wide domain of hysterical affections; and these either tend towards spontaneous recovery or yield to appropriate treatment. There exists also in the various forms of neuritis, neuralgia, and kindred complaints, which have not yet in every instance been actually demonstrated to be related to gross lesions in nerve tissues, there exists in these, another considerable group which is very largely remediable by appropriate means. I hold that even the group of organic diseases is less incurable than is usually taught, for it includes many a chronic case which goes from physician to physician, and in this way counts as a fresh case over and over again, finishing up in a Workhouse Infirmary such as the one where my own studies have been so largely carried on. Moreover, these organic cases are not as *fatal* as many cases belonging to cardiac, renal, and other specialities; and even for these something can be done by proper management, as I often had occasion to observe in the Paddington Infirmary. We need not dwell further on this point now, for we shall, I believe, have abundant opportunities of observing that diseases of the nervous system are not so incurable as the casual observer is apt to suppose.

Coming to the subject of to-day's lecture, it is often the fashion to select, for meetings such as these, rare conditions which present features of interest, perhaps by reason of their very rarity; but I have thought it best to select the very commonest. Among the great number of persons who daily apply for relief at the out-patient department of this hospital, a large proportion, while apparently free from any discoverable morbid lesion, bitterly complain of a variety of distressing and peculiar sensations, which though vague and indefinite are obviously most discomforting. Very often they come and say simply that they feel "nervous." Now, gentlemen, when you have investigated these patients, in nine cases out of ten you come to the conclusion that the disorder they are suffering from is neurasthenia. Thus it happens that this condition is one of everyday occurrence, and therefore, one of considerable importance. Nevertheless, strange to say, it is either not referred to at all or is very inadequately dealt with in the text-books in current use. No apology, therefore, is needed for introducing this subject to your notice to-day. It is certainly a drawback that there is rarely anything tangible to show in these cases; physical signs are usually conspicuous by their absence. I can only bring the patients before you, so that they may describe to you the strange and often distressing sensations which they feel.

I do not mean to say that every patient who comes complaining of nervousness suffers from neurasthenia. A few of these patients turn out to be suffering from hysteria, but hysterical patients are "nervous" all their lives, and therefore as a rule are too much accustomed to it to consult their doctor; but many a strong-minded man is in these days overtaken by neurasthenia. To him the symptom is new, strange and disagreeable, and one for which he promptly seeks relief. A few apply the term "nervousness" to muscular tremor, and some apply it loosely to certain mental symptoms for which they cannot find a name. But unless my memory has played me false, some 90 per cent. of the patients who come complaining of "nervousness" are found to be suffering from neurasthenia.

Let me at once correct the idea that neurasthenia is a new name for hysteria; it is not so, though it seems more than likely that many of the cases we now know as neurasthenia were formerly grouped in the class hysteria. The cases to which I refer form, as you will shortly see, a legitimate group of their own, distinct from hysteria on the one hand, and from melancholia on the other.

It is well we should, at the outset, clearly understand what is meant by the term neurasthenia; but the symptoms such patients present are so varied that it is somewhat difficult to give a satisfactory definition of the term. In order that we may have a common basis of understanding, I may say that I regard neurasthenia as an *irritable weakness of the entire nervous system, characterised by hypersensitiveness of the tactile sensibility and special senses; by headache, inaptitude for mental work, disturbed sleep, and irritability of temper* (when the brain is chiefly affected); *by general weakness, restlessness, nervousness and vague pains* (when the spinal cord is chiefly affected); *and usually accompanied (in both forms) by various phenomena referable to the vasomotor and sympathetic systems.* These two forms, the cerebral and the spinal, are always more or less mixed, neither occurs alone, though generally one or the other predominates.

To-day we shall confine our attention absolutely to the clinical aspect of the disease. If we can get a true clinical picture fixed in our minds, we shall be less likely to go astray when we come to study the pathology of this important malady.

The *first* case I want to bring to your notice is a typical one; it is that of a policeman, aged 37, who came here on December 17, having suffered from pains in the back and head for six weeks. He describes the headache as being like that produced by a hat which fits him too tightly, or a burning feeling round the forehead; he has also had "staggering" at times. What seems to have occasioned the attack principally was his being placed on "traffic duty." At once, he says, he became very "nervous," starting on the slightest provocation; his sleep was disturbed by "jumps" and terrible dreams, in which he thought he was being run over. His condition of nervousness and inaptitude for work, both mental and physical, by reason of the general weakness was pitiable. He was taken off "traffic duty," and I prescribed for him bromide of ammonium, 15 grs. three times a day, with an appropriate regimen, and in the course of three weeks he has become quite well again. Never, at any time, did he have any indication of disordered digestion, but for some considerable time before going on "traffic duty" he had been unable to procure sufficient sleep.

CASE I.

The *second* case is that of a man aged 28, a case of neurasthenia of gastric origin. He came here on November 17, complaining of a general nervousness and inaptitude for work, and of two sorts of attacks. In the one he has "heartburn" (acid eructations) and flatulence, followed by a burning sensation in the stomach, and pains round the waist like "diarrhœa pains." Then the flatulence is followed by a feeling of trembling and faintness, and finally he is seized by an attack of shivering all over. He has these shaking fits about three times a week. Water, or something to drink, sometimes relieves them. He also has another kind of attack, and these he calls "helpless attacks;" and as an illustration of the kind of patient one has to deal with, I may mention that he sent his wife, not having the courage himself, to tell us that sexual intercourse produces these latter attacks, and also that he has involuntary nocturnal emissions during his sleep, which also produces them. On the day following either of these events he is subject to attacks of complete helpless-

CASE II.

ness and prostration, lasting from one to three hours. He is affected thus about every two or three weeks. He was in a remarkably "nervous" condition, and was terribly apprehensive lest the battery should be applied to him when he came here. I first treated him in the usual way for his gastric trouble, giving him a mixture of rhubarb, soda, and cardamoms, and then gave him bromide of ammonium, 10 grs. three times a day, and he is steadily improving. His malady has lasted for two or three years, and for two or three years before that he had had gastric troubles incidental to his occupation, which is that of a cook. Probably his indoor mode of life has something to do with his attacks, but the main cause undoubtedly is dyspepsia, which has resulted in a malnutrition of the body generally, and the nervous system in particular. It is curious that he has had no headache, which is so common a symptom in these cases. As I question the patient, you will see that these points all come out; he is a sallow, unhealthy-looking man, but he presents no physical signs, and his viscera, other than the stomach, are healthy.

CASE III.

The *third* case is that of an engine-fitter, named A. H—, who is 32 years of age; his illness commenced with a malady which very frequently precedes and determines functional disorders of the nervous system—influenza. He has lived a very healthy life, and was never nervous until two years ago, when he had influenza, complicated, it was believed, with "congestion of the brain;" and since then he has suffered from general weakness and giddiness, always on going into the open air, and singing in the ears almost constantly. He also has attacks (two or three a week) which he will describe to you himself. He says an attack begins like "a wave of prickling," commencing in the head and running down the trunk and legs, chiefly on the right side. This is followed by a feeling of fulness at the top of the head, which "seems as if the blood will burst through the nose;" and finally there is a cold feeling down the right arm and the right leg. Gentlemen, the hemiplegic limitation of these subjective symptoms is a circumstance of the greatest interest. They are obviously of vascular origin, for he assures us (and he is a very intelligent man) they are accompanied by a *flushing of the right side of the body and limbs*, followed by pallor when the cold stage is reached. Between the attacks he feels too weak to work, and is subject to dyspnœa on the least exertion. He has also several other symptoms referable to the vaso-motor system—such as localised flushings followed by shiverings, and cold hands and feet. During the attacks, of which I spoke just now, he feels as though he must "talk to someone, or else he would jump out of window." Moreover, this man has had delusions of various kinds; not permanent, but grave enough. He tells us he has had an inclination, on several occasions, to murder the baby, and that he really feels most miserable and depressed. It is possible that some might feel inclined to make light of these symptoms, but I assure you, only those who have suffered from neurasthenia can have any idea of the extreme misery these people suffer. The sensations of bodily illness, depression, helplessness and weariness are really some of the most miserable feelings that can curse humanity. This man had a transient attack of left facial paresis (probably from peri-neuritis) during convalescence from influenza, and here we have another illustration of the marked proclivity this disease has for the nervous system. At first he was put on a stomachic mixture with ammoniated tincture of quinine (a valuable remedy in most complications of influenza); then on gentian, alkalies, and nux vomica; and now he is taking valerianate of zinc. To the latter, combined with bromide, I attribute his improvement.

CASE IV.

The *fourth* case is that of a woman aged 30, who was quite healthy till eighteen months ago, when a child, to whom she was very devoted, died. Since then she has suffered from great depression and attacks of extreme "nervousness," which come on irregularly but frequently during each day, are attended with severe flushing, shivering, palpitation, and perspiration, and followed by great agitation and floods of tears. She also suffers from cold hands and feet, and occasional "faints." This case resembles hysteria in some of its features, but she has had none of the active manifestations of that disorder —no paralysis, spasm, anæsthesia, or seizures—whereas all the chief indications of the other disease are present. She complains, moreover, of a very common symptom in neurasthenia—agoraphobia, *i.e.*, she dreads to be alone. When so left she says the feelings of terror and dread of impending evil which come over her are indescribable. She cannot even come to the hospital without a companion. She has had ammoniated tincture of valerian and bromide of ammonium, but so far the medicine has only partially relieved her; for her cure it will, I believe, be necessary to remove her completely from the conditions under which the neurasthenia arose.

CASE V.

There is one other case which I should like to briefly relate, which occurred in my private *clientèle*. It is a very interesting case of a post-office clerk, aged 37, who had worked very hard and closely at figures since fifteen years of age. He came to me to decide whether he should give up his post, as he had been advised to do by two other medical gentlemen, because of his incapacity for work, and his complete failure to obtain relief from the distressing symptoms. Great depression, inability to grasp mental facts, incapacity to remember names, and a dread lest he should make a mistake in his work, were the symptoms of most note in this case. I have noticed that this fear of making a mistake in their work is a very common symptom among neurasthenics. He also had severe headache resembling the headache due to asthenopia, *i.e.*, a headache which is bad on first rising in the morning, getting better during the day, and then worse again in the evening. In this case, as in the first I showed you, there was never any gastric disorders.

I found he had a very serious error in his refraction, and accordingly I sent him to my colleague, Mr. Dodd, who fitted him with glasses. Six months after I first saw him he wrote me that "the glasses had worked wonders" and that he was "completely cured" by having his error of refraction corrected; that he had kept his position in the Civil Service, and was working as hard as ever, this time without any of the distressing symptoms for which he had been condemned to abandon a lucrative post, and to throw his wife and children upon the charity of others.

I have not troubled you with all the details of this case, but it seems to me a very interesting one, in that the neurasthenia, which was of a marked cerebral type, and attended by mental symptoms of considerable gravity, was in the course of a few months completely cured mainly by correcting the error of refraction.

These, then, are examples, fairly characteristic examples, taken from an enormous number which I could bring before you of this extremely common condition.

I will next mention to you, in the order of the frequency in which, according to my experience, they occur, the SYMPTOMS of neurasthenia; derived from an analysis of 127 cases. They may be divided into general, somatic, or bodily symptoms, and cerebral symptoms. The chief complaints which these patients make, even in the slightest cases, are (1) that they are *easily startled* and *easily tired.* The nervousness, *i.e.*, "being easily startled," is mostly accompanied by definite general muscular weakness, or a lack of endurance, a feeling of always being tired, even when they rise in the morning; and in some cases of a severe type they are incapable of any muscular exertion at all. In less severe cases their movements are weak and uncertain, and attended sometimes by tremor or incoordination.

(2) *Headache* is the next most common symptom that one meets with, though you will observe that it was absent in one of the three patients whom I have shown you to-night. It is, however, very rarely absent. Charcot used to describe this headache as the "casque neurasthenique," a feeling as though the patient were wearing a tight-fitting helmet; but this is not an invariable feature. Frequently giddiness accompanies headache—not true vertigo, but a sensation of dizziness.

(3) *Disturbed sleep.*—This symptom of disturbed sleep is not an insomnia, indeed the patients often appear to be very sleepy people; but their sleep is disturbed by bad nightmares and restlessness. A marked characteristic of this disturbed sleep is that as they drop off they start violently. "Night-terrors" frequently break their rest, and delusions or dreads of imaginary evils trouble them in the semi-waking state, especially in the early morning.

(4) *General weakness* — not a localised paresis, be it observed, but a general bodily weakness—is always present. They will tell you they cannot walk 100 yards without exhaustion. It is probably due to deficient initiation of the motor impulses in the brain cells. This general weakness is often combined with attacks of prostration and depression, and may be either constant or come on in attacks, often worse after meals. This prostration may pass into a melancholic condition, such as the female case which I have shown you to-day. The patient was on the verge of acute melancholia when she first came here.

(5) *Restlessness.*—Although these patients are so weak, they feel compelled to keep perpetually moving, continually "on the fidget." This restlessness often manifests itself in constant jerkings and twitchings of the limbs. I have just now a patient in my private practice who is absolutely unable to sit in one position for a single second, and who is constantly jerking her limbs about. Moreover, these patients have a constant desire to be somewhere else than where they are. These symptoms are doubtless familiar to many an overworked doctor and to others who are unable to take sufficient repose or relaxation. This restlessness may take the form of definite attacks of agitation or tremor, as in the man I showed you; and it is generally combined with exaggeration of all the superficial and deep reflexes, especially the latter. But in very severe cases I have sometimes found the knee-jerks absent; there is no constancy in this respect.

(6) *Pains in the back and limbs, and general hyperæsthesia.*—These pains in the back the older authors used to call "spinal irritation," or rachialgia. Sometimes a pain predominates and persists in one particular spot, and is attended by tenderness over the spinous processes.

But, gentlemen, "pain" is a generic term used by these patients to describe all their disagreeable sensations, and if you enquire carefully into these "spinal pains," you will generally find they are seated chiefly in the ligaments and muscles of the back, and that the tenderness also is generalised. It is a tired aching, and resembles the indescribable weariness felt after a person has sat bolt upright for a long time. The kind of feeling is, indeed, rarely altogether absent, and may prevent the patient from sitting up, or even standing upright. The "pains in the limbs" also very generally affect the muscles, ligaments, and joints;[1] and these again resemble the weariness of unaccustomed exercise. True neuralgiæ of various kinds may complicate neurasthenia, but what I refer to now differs considerably from pain of a sciatica, a facial neuralgia, or even that of a pleurisy.

With these spinal pains there is often combined a generalised hyperæsthesia of the skin, and sometimes of one or more of the special senses. Patients may be so sensitive that a slight draught, or the slamming of a door, gives rise to acute pain. True anæsthesia is comparatively rare but a "numbness," "coldness," "deadness," and an endless variety of other paræsthesiæ of the hands, feet, and various other localities, are extremely common. These sensations belong, in my opinion, to the vaso-motor and sympathetic disturbances, under which heading we shall meet with them again. Smell and taste are only rarely affected, but there may be photophobia and singing in the ears. One of the patients I have shown you suffers in this way, and he also complains of muscæ volitantes. Sometimes there are actual hallucinations; but, on the other hand, anæsthesia or hyperæsthesia of the special senses frequently comes on after they have been used for a short while. The vision may be imperfect, and careful investigation often reveals, in such cases, a marked retraction of the fields of vision, or hæmianopsia, yet without discoverable changes in the fundi oculorum.[2] Sometimes the hearing is imperfect in one ear, though the most thorough investigation does not reveal any structural defect.

The foregoing are the principal symptoms referable to the body; let us now turn to those referable to the mind, which are of equal, if not greater importance.

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[1] The localisation of these "pains" in the joints may perhaps have given rise to the idea that neurasthenia is an "arthritic neurosis" (Axenfeld et Huchard. "Traité des Névroses," Paris, 1883).

[2] This important diagnostic feature is referred to again in the etiology of traumatic neurasthenia.

(7) *Irritability of temper* is a marked feature in most cases, and is only part of the general upset of the *emotional equilibrium*. This perversion, be it observed, hardly ever takes the form of gaiety. There is always a tendency to depression, sadness, melancholy, a dread of some imaginary evil which they cannot name—outbursts of tears, not laughter—and the physiognomy of the patient is in keeping with this. As the patients themselves declare, these sensations are "horrible" and "indescribable," and it is often difficult for them to find words to express their feelings. *Agoraphobia, i.e.*, a fear of being in an open space, or a dread of being alone, is a symptom belonging to this category. One must bear in mind that in these cases of emotional disturbance the moral nature is upset as well. Patients are apt to be more irritable with the people they formerly liked best, and thus it happens that neurasthenia slips into insanity, for, as Esquirol remarks, "moral alienation is the first step to madness." *Timidity* is another characteristic of this disorder. The second of my cases was an illustration; and I might quote another, if you will pardon me, who volunteered that he had not the "courage of a louse," though formerly he was afraid of nothing.

(8) *Deficient memory* is another constant symptom of neurasthenia, and it was present in all the cases shown you to-day. Here, again, these cases insensibly glide into insanity, for memory is often the first faculty of the mind which fails. A loss of memory for names is a very characteristic symptom.

(9) *Inaptitude for mental work* is also a prominent feature, and it happens because the patient cannot concentrate his Attention. It is a lack of Attention that is the real difficulty—in other words, it is the deficiency of Will. This same deficiency makes itself manifest in other ways; they are irresolute, they are very vacillating, and it is the want of will power that is at the bottom of their difficulty to do work. I remember Dr. Savage telling me of a very interesting case of a man who was permanently mad. His madness consisted of his inability to make up his mind to do anything. When Dr. Savage told me the story, he

mentioned as an illustration of this defect that the patient could never make up his mind to get up in the morning, and I thought that there are a great many people who would come under the term "mad" if that were a definition of it. But this person, he told me, when travelling across a desert where there were many brigands, took off his boots and could not make up his mind to put them on again. But this lack of will-power in neurasthenia differs from true insanity in its being less permanent, and in varying from day to day. Similarly the delusions and hallucinations which sometimes trouble neurasthenic patients are only distinguished from true insanity by being transient and variable from day to day.

(10) Those are the main symptoms of neurasthenia referable to the spinal cord and the brain, but there is yet another most important class of symptoms which belong, in my belief, to the *Sympathetic System.* Long-drawn sighs are extremely characteristic symptoms in these cases; attacks of causeless palpitation, or of general "flushing," followed by pallor, shivering, or sweating. These patients frequently suffer from cold hands and feet, or complain that they go "numb" or "dead," or blue, without provocation. The tâche cerebrale of Troussau can often be elicited. They may also complain of throbbing, heaviness, bursting of the limbs, or the prickling feeling, or crawling of insects in the extremities (formication), which as I have so frequently before pointed out may be associated with neuro-vascular disorder.

(11) *The Pulse* in neurasthenia may be normal, but it is far more often unduly rapid, and frequently weak, sometimes it is irregular in rhythm; but the feature which is more characteristic than anything is its "excitability." The least thing—any little noise, the presence of a stranger, or any slight excitement—will start the pulse off at a very rapid and often irregular rate. The blood tension in those cases which I have examined for this purpose has been invariably low. I show you here a well marked illustration of this condition, taken from the first case you saw to-day. The two tracings represent (*a*) the condition of the pulse when the patient was suffering from neurasthenia,

and (*b*) a tracing of the same pulse after recovery. My observations on this point have not been sufficiently numerous to state precisely, but my belief is that there is generally a reduced tension; sometimes I have found it extremely low. This has been specially marked in those patients who complain of profound prostration, and vague feelings of intense bodily discomfort.

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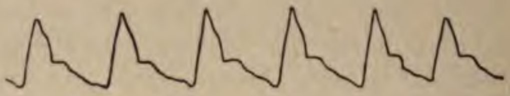

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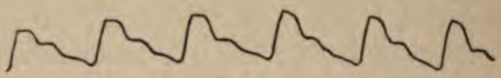

(12) *Vertigo*, or a feeling of dizziness, or faintness, sometimes going on to actual syncope was noted as present in a certain proportion of my cases. This swimming or "unsteadiness" in the head, was apt to come on on assuming the erect posture, and might cause an uncertainty or swaying in the walk. In most patients it came on from time to time, especially after meals, but in some it was constantly present. The features of this symptom were very like those met with in arterial sclerosis and other circulatory disorders, to which category, in my opinion, it belongs. The peculiar feeling as though the patient were sinking through the earth, or the bed, complained of by some, belongs also to this class, it is, I believe, another evidence of the disturbance of the cerebral circulation.

(13) *Gastric symptoms* not infrequently accompany neurasthenia and collectively may have a strong resemblance to true gastric disorder. When these symptoms predominate the condition is sometimes called "gastric neurasthenia." But I hope to show you, gentlemen, that these symptoms differ from those of true dyspepsia.[1]

(14) *The urine* is usually abundant after the exacerbations to which some of these patients are liable; it is pale

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[1] These differences are given categorically, and the whole question is fully discussed in Lecture III.

and of low specific gravity, but otherwise normal. The sexual *desire* is sometimes increased, but the sexual *vigour* is generally diminished.

(15) *The temperature* is normal, but occasionally the surface of the skin feels hot—to the patient very often "burning."

These are the symptoms which I have arrived at by an analysis of my cases, and I have ventured to dwell on them, because they do not receive the attention which this distressing condition merits. Cases vary widely in severity, and perhaps it is because the symptoms are so vague, and *to the observer* appear so trivial, that the current text-books neglect the complaint. This omission, gentlemen, is my only excuse for troubling you with so much detail.

It will be observed that nearly all the symptoms are subjective. The exaggerated *knee-jerks*, which are by no means constant, and the retraction of the fields of vision, or possibly hemianopsia, are the only objective signs, and these are not invariably present. My colleague, Dr. Outterson Wood, has drawn my attention to the fact that the pupils of these patients are very frequently widely dilated and fail to react to light, and have found such to be the case since I have looked for it. In medico-legal cases these facts may be of great value.

Course and prognosis.—Neurasthenia is essentially a chronic affection which starts gradually, though its onset in some cases, especially when referable to traumatic causes, may be sudden. Its course, when unmodified by treatment, may be prolonged over many months, broken by numerous periods of temporary improvement or exacerbation. It has a great tendency to relapse, which is aggravated considerably by the habit these patients have of leaving off treatment directly they feel a little better. In most cases there is no danger to life, but the inconvenience and the suffering these patients undergo is sometimes very great, and their relief is urgently called for. The chief fear is lest they should drift into insanity; and if the cause of the neurasthenia be continuous, and there be an hereditary taint of insanity, the prognosis assumes at once a very serious aspect. On the other hand, if the cause be removable there is, I believe, no nerve complaint which is more amenable to treatment. The most unfavourable symptoms are melancholy and alterations in the fields of vision, both of which indicate, in my experience, considerable disturbance of the nervous system, and are apt to be very persistent. I have known the latter to remain unaltered for five years. In general terms the prognosis depends chiefly upon three conditions—the age of the patient, the duration of the cause, and its removability. In patients under thirty, where the cause has been in operation but a short time, and is readily removable, recovery in a few weeks can be assured. In the aged the disease usually runs a prolonged, intractable, and sometimes fatal course.

The *Complications* of neurasthenia usually take the form of some nervous disorder, to many of which these patients become an easy prey. Neuralgiæ of one kind or another constantly occur; but some form of insanity is perhaps the most frequent of the true complications, a fact which, unfortunately, they themselves seem to know intuitively. Hypochondriasis is another result, and I have met with writer's cramp and palsy, habit spasm, chorea and choreiform movements. Less serious, but more frequent than these, are various disorders belonging to that large and unexplored domain, the angio-neuroses, *e.g.*, acroparæsthesia, and some form of erythema or urticaria.

Diagnosis.—The very vagueness of the symptoms is an aid to the diagnosis. There are certain cardinal symptoms which are rarely absent: the patient complains of being easily startled [1] and easily tired, of intellectual and bodily enfeeblement, of headache, restlessness, and of various vague disagreeable sensations. The presence of these and the absence of any organic lesion enable one to arrive at the diagnosis.

The only disease which gives rise to any difficulty is *hysteria*,[2] and it is not always easy to distinguish these two disorders. Indeed, both complaints may arise in the same individual, and under the same circumstances, and they may be concurrent or mixed in varying proportions. There are, however, four principal points in which hysteria and neurasthenia differ from each other. *First*, hysterical disorders are not so much those of exhaustion as of active perversion of the functions, such as localised paralyses, anæsthesiæ, and so forth. *Secondly*, anæsthesia, especially in the form of hemianæsthesia, which is so extremely common in hysteria, is extremely rare in neurasthenia; though hyperæsthesia is common enough. *Thirdly*, neurasthenia is equally common in both sexes, perhaps a little more common in the male, whereas hysteria is far more common in females. And *fourthly*, in hysteria the emotional disturbances predominate, whereas in neurasthenia intellectual weakness takes the lead, and attracts our notice first. In hysteria it does not at all follow that the intellectual functions are weak or disturbed; that is a point always to be borne in mind. Some of the brightest intellects of our times have been hysterical subjects; but neurasthenia is a bar to intellectual work.

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[1] Nervousness occurs, as already mentioned, in other diseases, but it is the cardinal and invariable symptom in neurasthenia.

[2] The diagnosis of neurasthenia from hysteria and hypochondriasis is dealt with more fully in Lecture III.

Hypochondriasis is a malady not difficult to sort out from neurasthenia; though when prolonged neurasthenia passes on to hypochondriasis it may be hard to say where the one ends and the other begins.[1] *Petit mal* can be mistaken for neurasthenia if faints are a prominent feature. I have a lad under my care whom I for a long time considered to be either hysterical or neurasthenic. But sooner or later in these cases an attack of *grand mal* occurs, and that clears up the difficulty.

The nervous phenomena of *Graves's Disease* bear a very precise resemblance to neurasthenia, and it should be remembered that the enlargement of the thyroid and exophthalmos may not become obvious until many months or even years after the nervous and cardio-vascular symptoms. The pathological similarity of the two diseases will be more fully appreciated when we are discussing the pathology of neurasthenia.[2]

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[1] The diagnosis of neurasthenia from hysteria and hypochondriasis is dealt with more fully in Lecture III.

[2] (*Vide* Lecture III.)

The diagnosis from actual *insanity*, of course, has to be considered. Often the first stage of insanity consists of neurasthenia, and if there be an hereditary taint of insanity it almost surely constitutes the prodromal period.[1]

Ætiology.—There are five principal *predisposing causes.* (1) As regards age—no age is exempt, but it is commonest in young adults. It occurs in children, though certainly it is least common in them; probably because their recuperative power is so great, and they are so rarely troubled with dyspepsia. Many of the cases I have met with in childhood have been in association with some form of asthenopia, combined very often with over-strain at school, or insufficient food, or both. But I know of no reason why it should not affect children when placed under the same conditions as adults.[2] (2) It is, I believe, about equally common in both sexes, though I have met with more cases in males (61 per cent.). (3) Heredity is a predisposing cause in the shape of a neurotic taint, an inherent irritability of the nervous system, as shown by the occurrence of various other nervous disorders and especially insanity.[1] (4) Occupation, and especially a sedentary indoor life is a more important causal factor; for example, of the cases I have shown you to-day, one is an engine-fitter, who sat all day at his lathe, and one is a cook; another I mentioned to you was a post-office clerk who sat at his desk all day calculating figures. Perhaps the most numerous and typical examples are drawn from clerks. Any occupation which involves sustained intellectual effort, such as the professions, or which involves emotional strain, such as traffic duty among the police, acts as a predisposing cause. (5) Different views are held as to how far the habit of masturbation, either past or present, can cause neurasthenia and other nervous disorders. My own view is that it may be a very important causal agent in some cases; and I should like to take this opportunity of emphasising my belief that masturbation is more common in females than is usually thought. Within the last year I have met with several instances, and I should always suspect either alcoholism, the morphia habit, or masturbation, if no other cause can be made out. There are three signs which I have learnt to regard as indicative of masturbation in the female. One is the extreme sensitiveness of the genital organs. If you propose an examination in such cases, it is very likely you will reveal that sensitiveness at once without making that examination at all, for the patient will protest with unnecessary vehemence and then probably admit the habit. The second sign is dyspareunia. One of the cases I have seen in the last three months came to me at the request of the husband for this very reason. They

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[1] The various mental symptoms of neurasthenia and the diagnosis from insanity are dealt with in Lecture V.

[2] CASE VI. *Incipient neurasthenic insanity in childhood.*—Agnes C——, a healthy-looking child, aged 11, was brought to the hospital by her parents, both of whom were under treatment for neurasthenic symptoms, and her mother for incipient phthisis, for attacks of crying and depression, two or three times a day, which had come on during the last few weeks. She did not have fits of gaiety and laughter such as hysterical patients do, and she often sat brooding for hours together saying she thought everybody was "against her." Her sleep was broken and disturbed by bad dreams; and she wandered downstairs to her parents almost every night on account of the gloom and sadness of her thoughts. The appetite was bad, bowels regular, and all organs normal. Some improvement ensued upon the administration of quinine, hydrobromic acid and bromide (8 grains) t.d., but it seemed as though insanity was coming on for, a little later on, the fits of depression alternated with attacks of excitement and "silliness," her mother said. This child was found to have an extraordinary degree of hypermetropia, her vision being only $\frac{6}{12}$ths of normal. When this was duly corrected by glasses, and an appropriate regimen was enjoined, she began to make steady improvement. The immediate cause of her symptoms appeared to have been a too close application to study.

CASE VII. William F. C——, aged 14, a pale, rather undersized boy, coming of nervous parents, complained of having been getting gradually more and more "nervous" during the last few weeks, and gradually losing his memory. He suffered a good deal from headache (chiefly near the eyes) disturbed sleep, night terrors (which is a frequent symptom of neurasthenia in children), and attacks of giddiness and faintness on returning from school.

His appetite was poor, and the bowels apt to be confined, but there was no evidence of dyspepsia. All the viscera were normal. His mother had regarded him as " delicate " and he had been kept from school. As a consequence of this he was backward and had only reached the fourth standard. To regain the lost ground he had recently been working extremely hard; to which, and a slight degree of hypermetropia his condition was attributable. However, he immediately began to improve, without wearing glasses, on taking mag. sulph., mag. carb., and am. brom. (gr. 5) t. d., and attention being paid to the diet and school hours; and in the course of a few weeks was quite another child.

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[1] The subject of heredity is more fully dealt with in Lecture III.

had been married seven years, and the wife had never been free from painful coitus the whole of that time. The third feature is the neurasthenia.

Most of the *exciting causes* bring into operation one or both of two conditions—disturbed nutrition[1] or over-functioning of the nervous system.

(1) Overwork is one of the most familiar causes in all of our experiences; too long hours, too close attention to work without a break, and an inordinate desire to finish an allotted task. One finds it in busy city life, in the keen struggle for existence, and one finds it also most frequently in the autumn months, when men have not been away for some time. Overwork of the mind is what I am chiefly referring to, but physical exertion is also a strain upon the nervous system.

(2) Great grief, or emotional strain of any kind, or bereavement, such as you will remember, had occurred in the female case I showed you this afternoon. The trouble and worry of making both ends meet is a potent factor.

(3) Asthenopia, or eye-strain from error of refraction, may alone, though more often in combination with overwork, result in neurasthenia, as in the case I narrated to you. How the connection is brought about is hard to say, but I may remind you that the ciliary muscle is supplied by the sympathetic; and we have Dr. Wood's valuable observation of the dilated pupils in these cases.

(4) Traumatism, or severe nerve-shock without actual injury, may be a cause. I have a man, aged 37, attending among my out-patients at the present time, who received a severe blow on the head, and, as a consequence, suffers from neurasthenia, which came on suddenly the day after the injury. Sometimes, however, the symptoms do not appear for one or two weeks, or more. This traumatic neurasthenia is sometimes a matter of great importance in a court of law, where perhaps a large sum of money may be at stake. The absence of any definite physical sign in such cases gives rise to great difficulty and conflict of expert evidence. I remember being engaged in such a case where

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[1] The reason I use the phrase disturbed nutrition, or dystrophy, in preference to mal-nutrition, will be apparent in Lecture III.

damages were claimed for severe neurasthenic symptoms which dated from a collision. Fortunately, in this case the patient complained of partial blindness, which I discovered was due to a very symmetrical contraction of the fields of vision which could not have been feigned by the patient, a cabman of inferior intelligence.[1] I have seen many examples of this traumatic neurasthenia in the aged; and one may call to mind a very eminent member of our profession who has lately passed away. He was severely shaken in a cab by the horse falling down; he felt nothing much at the time, but shortly afterwards he had a shivering attack, which commenced an attack of neurasthenia, from which he never recovered. The termination of his life was, as you may remember, said to be due to cerebral hæmorrhage; but this shock was the beginning of his end. I have often noticed in the aged that neurasthenia, developed by a severe shock in this way, leads to a gradual extinction of life, as of a candle burning down in its socket. They have no power to recuperate, but slip imperceptibly into the grave—death being produced, not by asthenia, but by neurasthenia.

(5) *Excessive use of certain drugs* is a potent cause of neurasthenia, and of these perhaps alcohol, morphia, and cocaine are among the commonest. Under these circumstances the neurasthenic symptoms are not felt while the drug is being taken in full doses, but when the gradual daily increase for which they crave is not maintained, or when there is a sudden cessation of the drug, then do symptoms arise.

The foregoing causes produce the disease by excessive strain or irritation of the nervous system. The three which follow are connected in some way with defective nutrition.

(6) *Dyspepsia* often precedes neurasthenia for many months or years, and so leads to defective nutrition and perhaps other defects in the metabolism of the body.

I am now engaged in making an analysis of my cases so as to ascertain if possible what is the meaning of this important association. I shall hope to refer to the matter on a future occasion.[2]

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[1] This Case is given in fuller detail in Lecture IV.

[2] See Lecture III.

(7) *Chronic constipation* is also very frequently present, and seems also to have some causal relationship.

(8) *Malnutrition* from insufficient or faulty food, phthisis, or constitutional debility; and *convalescence from acute illnesses* are also frequent causes. Among the latter influenza occupies a very leading position, and the worst of the cases you have seen is an illustration of this, though neurasthenia also frequently arises as a sequel of other acute illnesses, such as typhoid and rheumatic fevers, pneumonia, and the like.

Treatment.—In the short time that remains it will only be possible to deal with the question of treatment in the briefest and most general fashion, but I shall hope to have another opportunity of discussing this important matter in greater detail.[1] There are two chief indications, viz., to procure complete rest for the nervous system, and to improve the nutrition of the body generally and the nervous system in particular. You will of course bear in mind that any concurrent dyspepsia should be corrected as an initial proceeding. When this has been accomplished there are three measures which are extremely useful. The *first* is over-feeding by means of a liberal dietary into which milk, eggs, light farinaceous puddings, and other easily assimilated articles enter largely; and if they can be digested, abundance of fatty foods. The question of alcohol is a very important one, and as a general rule I have found these patients do better without any, for it only gives them a temporary fillip which is followed by a reaction in which the symptoms are aggravated. The only exception is in cases of the intractable neurasthenia of the aged. *Secondly*, massage is useful, in suitable cases, and has a double object—to promote the circulation by means of the deep kneading movements, and to produce sedative effects by the superficial stroking movements. *Thirdly*, removal of the patient from the conditions under which the disease arose. This, however, should not, as in hysteria, be combined with isolation, for isolation does harm rather than good in these cases. It should, however, be accompanied by complete relief from business, and the worries and anxieties incidental to the patient's daily life.

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[1] See Lecture IV.

Drugs are useful adjuncts in three ways. First, to cure the *dyspepsia*, for which bismuth is most valuable for the irritable dyspepsia so often present in this complaint. Secondly, to *procure sleep*, and for this the sovereign remedies are the bromides, which rarely fail to procure repose, if not sleep. The dose must be regulated according to the individual idiosyncrasy. My own guide is to give it in sufficient doses just short of drowsiness; 10 grains thrice daily may be sufficient for some, but in others you must push it up to 90 grains per day. Sleep is absolutely indispensable, and sulphonal may also be useful; though great caution is required with opium, antipyrin, chloral, and similar drugs which have a reaction stage. Then there are the various *nerve tonics;* the hypophosphites are very good, and phosphorus, which is best given in Martindale's pearls; these contain a solution of phosphorus $\frac{1}{100}$ to $\frac{1}{60}$ of a grain, but nothing prevents the disagreeable eructations. Valerianate of quinine or zinc also do good. Cod-liver oil I have much faith in, especially in combination with maltine. My experience leads me to avoid strychnine, nux vomica, and Easton's syrup, which often produce muscular twitchings, except in the aged, for whom strychnine and small doses of opium are most valuable tonics. Cold baths are very valuable remedies if the heart's action be not impaired.

In conclusion, gentlemen, allow me once more to emphasise the fact that we have in neurasthenia—or "nervousness," as the laity call it—one of the commonest and one of the most distressing disorders of the nervous system, and at the same time one of the most curable. In the course of these meetings I shall certainly have opportunities of bringing under your notice other illustrations in support of my opening statement—that the larger number of cases of disease of the nervous system yield to appropriate treatment.

LECTURE III.

A.—ON THE DIAGNOSIS OF NEURASTHENIA:
B.—THE PATHOLOGY OF NEURASTHENIA; AND ITS RELATION TO GASTRIC DISORDER.

SUMMARY:—*Cases of hysteria and hypochondriasis.—Table of diagnostic features.—Differentiation of neurasthenia from other disorders in which physical signs are wanting.*

Neurasthenia an irritable weakness of the nervous system.—Must be studied clinically.—Four groups; Toxic (gastric disorder), Malnutrition, Fatigue, and Emotional Shock.—Predisposition generally necessary.—Heredity, its rôle.—Compound causes frequent. —Toxic neurasthenia—Dyspeptic symptoms often present; their explanation.—They may be a neurosis of the stomach.—Disorders of digestion do produce neurasthenia (dyspeptic Na.)—Proofs; chronological, and other.—Paroxysmal Na explained.—Cure of dyspepsia results in cure of Na.—Gastric disorder produces Na by toxic blood state.—Proofs.—Evils of delay and mismanagement in treatment.

GENTLEMEN,—Among the various symptoms complained of by the out-patients of this hospital,[1] a very large proportion of them complain of "nervousness." The majority of these are found to be suffering from neurasthenia, but sometimes that symptom is due to other diseases, especially hysteria and hypochondriasis. The differentiation of these three maladies is often a difficult matter, and I think that we may profitably devote a little time to the subject. This is all the more necessary because cases which we now class as neurasthenia were formerly, in most instances, included in one or other of these diseases, but especially hysteria.

CASE VIII.

Here, for instance, is a patient, Minnie H——, aged 29, a widow, who is, I believe, the subject of certain hysterical manifestations, though they present considerable difficulty in diagnosis. She came to the Hospital in October, 1897, on account of nervousness and depression of spirits. She tells us that her mother, and all her mother's family, like so many of the Jewish race to which she belongs, were nervous, and her father died at the age of 50, of "creeping palsy." She and her two children live a very unhealthy life in one little room in the East End of London, where she earns a meagre livelihood with her needle.

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[1] Hospital for Diseases of the Nervous System, Welbeck Street.

However, so great is the tolerance of Nature, that she remained in what she calls good health until 1895, when a man appeared upon the scene, who wished her to become his wife. He troubled her a good deal with his persistence, but she preferred her liberty, albeit in penury. How correct was her decision was shortly to be revealed, for in April of that year he committed a most savage attack upon her and stabbed her in the forehead and elsewhere, as a consequence of which she was laid up in a hospital for some weeks, though the actual injuries were not, as it turned out, very serious.

It was the shock from this injury which determined an outbreak of the neurosis hitherto dormant in her. It did not come on at once, but it is now well known that the manifestations, both of hysteria and neurasthenia, may be determined by traumatism and shock, although there may be an interval of some weeks between the cause and the effect. Shortly after the injury she became troubled with horrible nightmares, and after leaving the hospital was so "nervous," and the slightest noise startled her so much, and produced such trembling of the legs, that she could scarcely stand. She suffered from great depression of spirits, and from attacks of palpitation in the heart, chiefly at night. She complained from time to time of pain at the top of the head, and found that her memory was failing her.

She stayed a short time at a convalescent home, and had a variety of treatment; but all these symptoms have persisted on and off for two and a-half years, though they have varied considerably both in kind and degree, and the nightmares have now given place to sleeplessness. Doubtless these symptoms, once started, have been perpetuated by her unhealthy existence, and my colleague, Mr. Dodd, has ascertained that she has congenital amblyopia in the left eye, and hypermetropia in both. In view of her occupation, that of a sempstress, this was quite sufficient to account for the headache, which in fact has disappeared since the error has been corrected by glasses.

During the eight months she has been under treatment here she has greatly improved. For the first four months she took ammoniated tincture of valerian, half a drachm three times a day, and all the while she has been taking bromide of ammonium, 10 grs., three times a day with saline aperients for the constipation which troubled her.

I thought at first this was a case of neurasthenia, but enquiry revealed the facts that she had been subject, at intervals during her life and with greater frequency lately, to attacks, slight, but of a typically hysterical nature; that many of the symptoms of which she complained were intermittent; and finally, that she had the typical "ovarie." On these grounds I have classed the case as one of hysteria, and the effects of treatment tend somewhat to support that view.

It is sometimes a little difficult to differentiate between these two diseases, but the points I have just mentioned are worth bearing in mind; and especially the fact that the symptoms of neurasthenia are usually more enduring and less variable than hysteria. The features of neurasthenia are those of more or less lasting *exhaustion;* the essential character of all the phenomena of hysteria is their occurrence in *paroxysms.* With the help of these and the other points mentioned in the table to which I will shortly direct your attention, you will generally have no difficulty in coming to a conclusion.

Although the two diseases can be differentiated easily enough after careful investigation, I am bound to admit that there are cases, and a very fair number of cases, which it is hard to place in one or other category. Prof. Charcot[1] describes such cases under the name hystero-neurasthenia, but I think this term should, as far as possible, be confined to cases of neurasthenia arising in subjects of the hysterical diathesis who have at some time in their lives presented the stigmata of that diathesis.

The next case I want to show you is one of a widely different kind. It is worthy of some attention, if only from the fact that he has been under my observation on and off for eleven years. He has always been of a morbidly sensitive and introspective disposi-

CASE IX.

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[1] Policlinique de la Salpêtrière, Leçons du Mardi, 1887-8.

tion, and he was therefore very considerably alarmed when, at the age of 51 (in 1885) he had a convulsive seizure, for the first time in his life. He went to bed as usual, and was told that he screamed out and struggled; and he states that he bit his tongue during the night. He says that he was unconscious for six hours next day, and was "strange in his head" for the next two or three days, not recognising anyone. I did not see him until July 1887, but he was said to have had seven or eight severe fits and seven or eight slighter ones during the ensuing two and a-half years, always at night. The convulsions were mainly, if not entirely, confined to the right side. Fits of this kind, coming on for the first time in a healthy man aged 51, are almost certainly indicative of intracranial syphilis. However, no history of the primary infection, nor of secondary manifestations was obtainable, and there were no symptoms referable to the cranial nerves. Nevertheless, that such was the cause in operation was supported by the improvement he made under a mixture of bromide and iodide.

From this time forward he remained in a very low-spirited condition; his memory failed him, he was apt to repeat himself in conversation, and gradually, in the course of the ensuing two years, he drifted into a very typical condition of neurasthenia. I saw him at intervals in 1887, 1888, and 1889, and he presented many of the symptoms of that disorder, complaining of nervousness, bodily enfeeblement, insomnia, and numerous disagreeable sensations. Even at that time he was tending to hypochondriasis; he always emphasised the most trifling details of his case, and spent a small fortune in going from one charlatan to another.

The abrupt way I had of reasoning him out of his more purely imaginary ailments apparently recommended itself to him, because some years later he traced me with much trouble to this hospital, where he has been under my care as an out-patient for the last two or three years. During this time he has presented the typical symptoms of hypochondriasis. Every fresh symptom, every fresh pain, means, in his mind, some mortal disease. He has suffered a good deal from constipation, which was easily remedied by aperients, but nothing would persuade him that he had not got stricture of the rectum; and he has submitted voluntarily to a large number of examinations by different surgeons, all of whom have come to a negative conclusion. I need not trouble you with the endless series of complaints which he has manufactured. The pronounced sadness which you will observe upon his face is the outward evidence of the gloomy view he takes of life; and yet, strange to say, this man is always striving after and hoping for cure, and there is not the slightest likelihood of his committing suicide, such as exists in the subjects of melancholia.

Not the least interesting feature of the case is the so-called "fits" from which he suffers. Ever since the first fit in 1885 he states that he has had smaller "attacks" from time to time. But they always occur at night; nobody has ever seen them, and he has never voided urine or fæces. My own belief is that these later attacks exist only in his mind, and I am supported in this contention by the fact that doing things which he does not like seems to aggravate them, whereas when his surroundings are congenial to him they occur less frequently. For instance, in 1891 he went into the West London Hospital, and states that he had numerous fits the whole time he was there, for ten months; but that immediately on resuming cohabitation with his wife he did not have one for the next ten months. He comes to me each week with large packets of notes which he vainly hopes I am going to read, recounting all his various sensations, down to the minutest detail, during the intervening days. The treatment has been directed mainly to correcting the constipation, combined with an occasional dose of bromide, and valerian.

Here, then, is a typical case of hypochondriasis, about the diagnosis of which there is not much difficulty. But some of the slighter cases present considerable doubt about their diagnosis from neurasthenia. Nevertheless, if you bear in mind the points which are given in the annexed table, there will not generally be much difficulty in arriving at a conclusion.

Hypochondriasis formerly, and neurasthenia latterly, have been regarded as a kind of hysteria in the male, but I trust that a study of this table will help to dispel these delusions. In their essential qualities, as drawn from a complete clinical picture of each, they are dissimilar. The respective mental attributes typically reveal this. Briefly it may be said that neurasthenia consists of an exhaustion of the nervous system, and the mind nearly always manifests this; in hysteria there is deficient will control and increased reflex irritability; whereas hypochondriasis is a peculiar mental attitude of exaggerated introspection.

Besides the two complaints just named there are others which are apt to be confused with neurasthenia. *Lithæmia* is one of the most important, but here, the habitual deposits of lithates in the urine, the mental hebitude, the absence usually of vaso-motor phenomena and other symptoms referable to the nervous system; the greater severity of the headache and its shorter duration, and the somnolence (instead of insomnia) which characterise lithæmia, may aid us in what is really sometimes a most difficult task, the differentiation of these two maladies.

Exophthalmic goître in its early stage is a malady which, before the proptosis and thyroid swelling appear, cannot be distinguished with certainty, though it may be suspected if the case resists all treatment, and the palpitation and other cardiac phenomena are very prominent.

In *chronic alcoholism* the tremulousness, fleeting pains in the limbs and debility, may resemble the disease we are considering, but the characteristic facies, the hepatic disorder, and the history should obviate mistakes.

Senile and other tremors should not be difficult of detection.

In *malarial poisoning* and other *anæmic conditions*, there ought not to be much difficulty, in presence of the other characteristic symptoms, physical signs, and history of these conditions. The same reasoning applies to other cachectic and debilitated states, such as those due to *syphilis*, *latent carcinoma*, *latent tubercle*, *Addison's disease*, *Hodgkin's disease*, &c.

In certain cases of neurasthenia, to which I shall shortly

TABLE OF DIAGNOSIS.

	NEURASTHENIA.	HYSTERIA.	HYPOCHONDRIASIS.
Sex	BOTH SEXES ALMOST EQUALLY ..	FEMALE SEX ALMOST ENTIRELY ..	MALE SEX ALMOST EXCLUSIVELY.
Age	ANY AGE—YOUNG MALE ADULTS SLIGHTLY PREDISPOSED.	THE FIRST ACTUAL MANIFESTATIONS ALWAYS APPEAR BEFORE 30.	VERY RARE UNDER 30. PREDISPOSITION FROM 30 TO 50.
Mental Peculiarities.	Intellectual weakness, but no special type of mind apparent.	Deficient will power (*i.e.*, vacillation, indecision). Want of control over the emotions.	Great determination and perseverance towards one end, viz., cure of an imaginary disease.
Cause..	Produced by dyspepsia, overwork, or other cause of malnutrition, or dystrophy.	The determining cause of its active manifestations an emotional upset or shock.	Solitary, sedentary life.
Onset and Course ..	Starts somewhat gradually and runs a fairly even course of moderate duration.	HYSTERIA ESSENTIALLY A PAROXYSMAL DISORDER. All phenomena (healthy or morbid) vary from hour to hour, day to day, and paroxysmal outbreaks are frequent.	Starts very gradually and runs a very even course of most indefinite duration.
Mental Symptoms ..	MENTAL EXHAUSTION and inability to think or study. Inattention. Memory deficient. No introspection. Temper irritable.	Wayward, hard to please, EMOTIONAL, lazy. No introspection, nor living by rule, nor study of medical works.	INTROSPECTIVE habit. Close study of medical books. Observing all accessible organs and secretions.
	Prostration rather than sadness. Not equal to the exertion of amusement.	If sad, it is transient (excepting in the male). Fond of gaiety and amusement. Usually joyous, but laughter and tears may alternate with great rapidity.	Habitual sadness. No taste for amusement.

General Symptoms..	Occasional attacks of vertigo or syncope. Convulsions never. Attacks of flushing frequent.	SEIZURES OF DIFFERENT KINDS frequently arise. Always flush very readily. Convulsive attacks in 75% of the cases (Briquet). Syncope fairly frequent. A great variety of symptoms occurring in paroxysms.	No attacks of any kind.
	Easily tired, easily startled. State of DEBILITY AND EXHAUSTION. Constant headache. Restlessness. Sleeplessness. Long-drawn sighs. DYSPEPSIA FREQUENT.	Between the attacks no symptoms may be present. But symptoms referable to the nervous and neuro-muscular system may arise. Thus:—	The digestion is often deranged, but in the patient's belief he has some grave disease either of the alimentary tract, abdominal viscera, vascular or respiratory system, or the head.
	Hemianæsthesia rare. Hyperæsthesia and dysæsthesia common. Pain in the back and sometimes in limbs. Reflexes may be increased, or diminished, or normal.	HEMIANÆSTHESIA VERY COMMON (though may be undiscovered), and other anæsthetic areæ. "Ovarie," tender spots around the mammæ, and in other positions. Reflexes increased. Borborygmi, globus, and other spasms of the involuntary muscles are frequent.	Small and insignificant symptoms, or even normal sensations, are endowed with great and perhaps lethal significance. Patient tries an endless succession of remedies and doctors; always striving for a cure (which distinguishes hypochrondriasis from the hopeless and suicidal tendencies of melancholia).
Termination ..	Lasts several weeks or months. CURABLE.	The diathesis lasts a lifetime; but the active manifestations come on suddenly, and after lasting a short time, usually disappear. SEMI-CURABLE.	Once started, the condition is very difficult to eradicate. INCURABLE.

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refer, the symptoms have a paroxysmal quality which gives to them some resemblance to *petit mal, migraine,* and other paroxysmal disorders. But here the presence of an aura, or of sensorial perversions, such as scintillating scotoma, and the perfect health of the individual between the attacks, enable one to arrive at a correct conclusion. In all the diseases just referred to physical signs are, as a rule, wanting. There should be no difficulty in the diagnosis of those disorders in which physical signs are present.

B. PATHOLOGY OF NEURASTHENIA.

All rational treatment must rest on a basis of pathology, and therefore, before discussing the treatment, it will be advisable to consider the pathology of neurasthenia. The disease, though it may be so troublesome and persistent, is very rarely fatal, and there is no recorded case attended by autopsy, as far as I am aware. We can therefore only regard the matter from a clinical standpoint. We shall, however, find the "method of analogy"[1] specially useful in circumstances such as these, for a large quantity of clinical material is available; and by a comparison of neurasthenia with other diseases resembling it clinically, where the pathology is better known, we shall, I trust, derive considerable profit.

Our methods therefore, gentlemen, will be entirely clinical, and you will perhaps pardon me if I venture at the very outset of our enquiries to sound one note of warning. When dealing with a disorder such as this, which is manifested almost solely by subjective symptoms, it behoves us to use the greatest care not to put "leading questions" to the patients. Their symptoms, albeit so distressing, are often so vague that even the most intelligent of them will sometimes answer in the affirmative when any symptom, no matter what it may be, is suggested to his mind. The other method involves a good deal more time and trouble, but it is worth the pains to let the patient unfold his own story.

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[1] *See* Introductory Lecture.

There are two facts which all observers now admit. The first is that the disease is a legitimate morbid entity, though the vagueness of its clinical features and the absence of physical signs render it less clearly defined than some other disorders, and sometimes less certain in its diagnosis. The other fact is that the greater number of symptoms are, as indeed you must have observed, referable to the neuromuscular system—the brain, spinal cord, peripheral nerves and muscles—and the remainder to the vaso-motor or sympathetic systems. According to some authors, gastric symptoms form an essential part of the disease, but the relation which the digestive disturbance, when present, bears to the nervous derangement will merit our most attentive study. All the symptoms point to an irritability and a weakness of the nervous system, an instability combined with a lack of endurance. Now, the two elements of which all nerve structures consist are cells and fibres, and the defect would seem to be more in the cells, whose function is to initiate and to act as centres of reflex action, than in the fibres, whose function it is to conduct. There is in some respects, in spite of what physiologists may say to the contrary, a considerable resemblance between electrical and nerve forces, and in nothing more than in this matter of exhaustion. Just as a faradic battery, after continuous use, gradually becomes weaker—we can hear the note emitted by the interrupter become more and more feeble—and then after a rest becomes restored again, so does nerve force require periods of intermission for recuperation. This seems to me to be the simplest way of looking at neurasthenia due to overwork; and this, in turn, is the simplest form of neurasthenia to study. Investigation of neurasthenic patients who present retraction of the fields of vision, confirms the idea that neurasthenia is essentially a state of fatigue or exhaustion of the nerve cells, for I have on several occasions found that the retraction is absent, or less marked after periods of rest, and *vice versâ*.[1]

Let us consider a little more in detail how this irritability and weakness of the nerve cells may be produced.

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[1] The case, for example, of a cabman narrated in Lecture IV.

A very little investigation shows that they may arise, like many other pathological conditions, from a complexity of causes, hence one of the chief difficulties in the task before us. A careful study of all the cases which have come under my notice, leads me to believe that neurasthenia may arise under four different pathological conditions:—

I.—*Toxic blood states*, which include the neurasthenia which supervenes on and is associated with prolonged gastric disorder and constipation, &c. (toxic neurasthenia).[1]

II.—*Malnutrition* of the nervous system, which arises in various debilitated conditions (malnutrition neurasthenia).

III.—*Over-functioning* or fatigue of the nervous system, such as may arise in all exhausted states (fatigue neurasthenia); and,

IV.—*Emotional shock*, or strain; and *traumatism*.

A predisposing or contributory cause is very generally combined with any one of these in the shape of an inherent weakness of the nervous system, derived mostly through inheritance. Not seldom we find two or more of the above conditions in operation at the same time, the one acting as a contributory or predisposing cause to the other.

These will form the four pathological groups which we shall have to investigate; and it is the first of these—the group consisting largely of neurasthenia due to digestive derangement and prolonged constipation—which is by far the most frequently met with among the out-patients of this hospital, and which will mainly occupy our attention to-day. I hope to be able to prove to you that the neurasthenia in these circumstances is, at any rate in a certain proportion of cases, *a consequence* of the disordered digestion.

Before taking up the subject of toxic neurasthenia we ought to consider for a moment an important *predisposing cause*, which is so frequently combined with any of these four conditions, namely, the inherent weakness of the nervous system, which is very often the result of heredity. However, *heredity* does not appear to play so prominent a rôle here as it does in the causation of hysteria. It can never act alone, but it nevertheless takes an important place here, as in other diseases of the nervous system, by preparing or predisposing the nervous system for the action of some other agency. A study of my cases shows that there are four ways in which heredity may act.

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[1] The neurasthenia which attends influenza and some other disorders also belong to this, the toxic group, but the opportunity for the study of these has been relatively infrequent in comparison with the dyspeptic cases.

First, a hereditary tendency to the development of nervous disease may be present as a *general neurotic taint* in the family, manifested by the occurrence in various members of the family of insanity, epilepsy, hysteria, &c. Secondly, a predisposition even still greater appears in the children of *alcoholic parents*, even when the family presents no record of definite nerve ailments. Thirdly, for some reason which does not appear on the surface, I find among my cases quite a number whose family history shows no nervous ailments but *tuberculosis* on one or both sides. And fourthly, *debility in the mother* at the time of pregnancy, either from deficient nutriment or rapid child-bearing seems to produce, especially in the younger members of large families, a proneness to develop the disease which does not exist in their brothers or sisters. In one or other of these ways an inherent weakness of the nervous system may result from heredity, and the nervous system thus becomes a " locus minoris resistantiæ."

A similar predisposition may arise from any of the other four pathological conditions above named, especially over-functioning (or what amounts to the same thing, deficient rest), and malnutrition of the nervous system. Take, for example, such a simple case as the policeman mentioned at our last meeting (Case 1, Lecture II). Here, want of sleep (cerebral over-functioning) acted as the predisposing, and the "emotional strain" of traffic duty as the determining cause of the neurasthenia. He had been on traffic duty before, but then his sleep had not previously been disturbed, and neurasthenia did not ensue. Take again the anæmic badly fed school-children who are often brought to this hospital for a variety of ailments. Here the nervous system is deficiently nourished, but this does not result in neurasthenia, unless the child be "overworked" at school (relatively to its strength); and it is the over-functioning of the nervous system which now forms the determining factor.

Turning now to the question of *toxic blood conditions,* it is worthy of note in the first place that a very large proportion of the cases I have collected presented some feature in the history of their illness which was, at any rate, capable of producing a toxic condition of the blood. Influenza, scarlatina, and other blood disorders might be mentioned; but certainly by far the most common of these at this hospital was some form of gastric disorder. Out of 157 cases, taken without selection from among my hospital out-patients, 74 revealed definite evidences of some form of dyspepsia, mostly accompanied by constipation, going on for periods varying between a few months and ten years, *prior to the advent* of the neurasthenic symptoms. This fact has a most important bearing on the question before us, as we shall see, for there can be no doubt that gastric disorder results in a defective elaboration of the products of digestion, and the pouring into the blood of a large quantity of imperfectly elaborated and toxic products. Constipation is capable of acting detrimentally in the same way, owing to the reabsorption of many materials which are intended for excretion. That a considerable amount of absorption takes place through the large intestine is sufficiently evidenced by the maintenance of nutrition and weight, upon the administration of enemata alone in cases, for instance, of gastric ulcer. Bad food or a dietary containing a deficiency or excess of certain articles, even without indigestion, are some of other errors which, in persons otherwise predisposed, may, I believe, give rise to neurasthenia; but my cases do not afford statistical proof of this latter point.

The frequent association of dyspepsia, or at any rate, dyspeptic symptoms, with neurasthenia, is now universally admitted. A good many observers state that dyspepsia or dyspeptic symptoms frequently precede, accompany or follow, the neurasthenia. But their precise relationship is not yet agreed upon, and in my belief is very often seriously misunderstood. Now when two morbid conditions, *a* and *b*, are frequently associated, *a* may be the cause of *b* or *b* of *a*, or they may both be the product of some common cause. These are not precisely the possibilities in the present instance, but there are three possible relationships between these two conditions—dyspepsia and neurasthenia—which we shall have to consider.

a—Some few hold that neurasthenia may cause a definite gastric derangement, albeit of a special kind. It is hardly necessary to discuss this at much length. You will, however, notice in the table I show you (vide infra) that out of 102 cases of neurasthenia associated with dyspepsia, there were 13 cases in which the two groups of symptoms started about the same time, and 15 where the signs of gastric disorder followed those of neurasthenia. Now, concerning these 28 cases, in nearly every instance there was quite sufficient evidence of some of the usual causes of dyspepsia, such as those which I shall shortly refer to, without the necessity of introducing neurasthenia as a cause at all. You will bear in mind, gentlemen, that I have in this table only taken those cases which presented definite digestive derangement.

β—Other authors and these, as you are doubtless well aware, are in the majority, hold that when gastric symptoms arise in conjunction with neurasthenia they are not due to disease of the stomach, but are neurasthenic symptoms referable to that organ. Observers of this school are in the habit of speaking of "gastric neurasthenia," "cardiac neurasthenia," and so forth, when the neurasthenic symptoms are mainly referable to the stomach, the heart, &c. These authors tacitly deny, or at least do not adequately consider, the possibility of neurasthenia resulting from gastric disorder. Some of them proceed to point out that "observers have often made the mistake of attributing these gastric symptoms in neurasthenia to dyspepsia or to definite gastric derangement." Charcot, for instance, reiterates this statement again and again. But, contrary to his usual practice, he gives no proofs in support, as far as I have been able to find.[1] Now there are, I believe, two arguments against the view that the gastric symptoms are *always* part of the neurasthenia.

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[1] Policliniques de la Salpêtrière, Leçons du Mardi. 1887-8; pp. 32, 63, and 518. The views of other authors on this difficult problem are admirably summarised in a note by Miss Agnes Blackadder appended to chapter v.

1.—I have already admitted that in *a certain proportion* of cases of neurasthenia this view appears to be correct; namely, that some of the neurotic symptoms are referable to the stomach and alimentary canal, *e.g.*, in cases of gastralgia and the like. But I believe that the *stomach symptoms in such cases have special features*[1] which enable one to distinguish them with more or less certainty from cases of true gastric derangement. In my experience these features are as follows:—(i.) The dyspeptic symptoms are variable and unstable from day to day; they come on and disappear suddenly, and often without any obvious cause. (ii.) They do not have such a definite relation to meals as in true gastric derangement. For instance in one case I observed the pain one day came on directly after, the next day before meals, and on another day one hour after a meal, as in hyperchlorhydria. (iii.) They may often be brought on by digestible food and relieved by indigestible. (iv.) They are always *accompanied* by the other manifestations of neurasthenia; and (v.) Bismuth and the other usual remedies fail to relieve them unless bromide be added.

2.—There is, moreover, a very important circumstance against the view we are now considering. If the dyspeptic symptoms are only part of the neurasthenia, how is it that they should, in such a large proportion of cases, *precede the other symptoms of neurasthenia by such long intervals* as six months, twelve months, three, four, five and even ten years before the appearance of any of the other neurasthenic symptoms? I have been through the cases referred to in my table again and again; I have followed up the cases to their homes to obtain further particulars and exclude the fallacies which surround out-patient practice. You will not fail, gentlemen, to appreciate the difficulties, the tediousness, and the liabilities to fallacy, in such an enquiry as this; but as far as the facts can be made certain, it is certain that the intervals given in the table are correct.

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[1] Beard himself points this out, and states that the pain and other gastric symptoms in such cases are characterised by being worse when the stomach is empty; by the fact that they may generally be relieved by bromides and not by bismuth and other drugs useful in true gastric disorder; and by their coming and going independently of dietetic or other causes. Neurasthenia (Nervous Exhaustion)—New York.

(γ.) There is a third possible relationship in such an association, namely, that the neurasthenia is, in a certain proportion of the cases, *the result* of the gastric disorder or deranged digestion; and this, in spite of the high authorities just mentioned, is the one to which I firmly adhere. I do not deny that in some cases the gastric symptoms are simply part of the neurasthenia (this is the "gastric neurasthenia" of authors); but I hold that there is a fairly large and important group of cases of neurasthenia entirely caused by antecedent digestive disorder, and this group I propose to call "dyspeptic neurasthenia."

The subject is beset with difficulties. In both neurasthenia and digestive derangement we are largely dependent upon subjective symptoms for the diagnosis of the disease; and the symptoms of both complaints are very vague. Nevertheless, I will ask you to analyse with me some of the cases which have presented themselves at this hospital, where as I have already mentioned, the major portion (about 65 per cent.) of the patients suffering from neurasthenia have also at some time or other suffered from symptoms of dyspepsia. In my private *clientèle*, and that of many others, these are in the minority, so my hospital cases are well suited for the investigation of this question.

There are eight reasons on which I base my belief that the neurasthenia in these cases is a consequence of the dyspepsia or gastric disorder.

(1) In the first place, on consulting the table of cases (Table II.), you will see that out of the 102 cases of neurasthenia associated in some way with definite derangement of the stomach, the *gastric derangement preceded the symptoms of neurasthenia by varying periods of time* in no fewer than 74, or nearly three-fourths. In two-thirds of these 102 cases (65 out of 102) the former preceded the latter by six months, or more. Other details are given in the table. These facts, gentlemen, speak for themselves, and repay us for the labour involved in such an inquiry.

TABLE II., SHOWING THE RELATION OF GASTRIC DISORDER TO NEURASTHENIA.

Out of 157 consecutive cases coming, for neurasthenia, to the Hospital for Nervous Diseases, Welbeck Street, in 1896, 1897, 1898, 102 (65 per cent.) presented evidences described below (No. 2, p. 59) of *definite gastric disorder* of different types (mentioned No. 4, p. 60), and due to various causes (No. 3, p. 60).

74 out of the 102 (72·5 per cent.) presented these evidences before the advent of the symptoms of neurasthenia.

Nearly all of them suffered from constipation, some of a most obstinate kind.

When analysed, the intervening periods between the advent of the gastric symptoms and that of the neurasthenia was as follows :—

a.—In 6 cases the gastric disorder preceded the neurasthenic symptoms by more than 7 years.
b.—In 10 cases the gastric disorder preceded the neurasthenic symptoms by more than 5 and less than 7 years.
c.—In 13 cases the gastric disorder preceded the neurasthenic symptoms by more than 3 and less than 5 years.
d.—In 17 cases the gastric disorder preceded the neurasthenic symptoms by more than 1 and less than 3 years.
e.—In 19 cases the gastric disorder preceded the neurasthenic symptoms by more than 6 months and less than 1 year.
f.—In 9 cases the gastric disorder preceded the neurasthenic symptoms by 6 months or less.
g.—In 13 cases the gastric disorder and the neurasthenic symptoms started about the same time.
h.—In 15 cases the gastric disorder followed the neurasthenic symptoms.

102 total.

Is it, I would ask, likely that the general neurasthenic symptoms would have lain dormant all this time? The long period of time which, in some instances, separated the neurasthenia from the gastric disorder suggested the possibility that, in some instances, the dyspepsia may not have been sufficient alone to produce the neurasthenia. In point of fact, in some of the cases in groups *a*, *b*, *c*, and *d*, with long histories of dyspepsia, the evidences of malnutrition were also present. Some of them had also suffered bereavement, others traumatism, some over-work and mental strain, as contributory causes to the gastric disorder. But in most of the recent cases (groups *e* and *f*), and in the great majority of all the groups, the gastric disturbance was undoubtedly the principal or sole cause in operation. Moreover, in case after case, as the digestion was gradually relieved the neurasthenia began to disappear, even without any remedy directed to the nervous system. It is quite possible, also, that to produce their evil effects upon the nerve structures, these toxic products require a considerable time to act; just as a man may go on burning the "midnight oil" year after year for a very long time with impunity, but the day of reckoning comes at length.

(2) Another fact of some importance is this, that the *symptoms of gastric disorder in these cases were definite, constant and consistent*, quite different, when careful enquiry is made, from those of a vague neurosis of the stomach. Such as had dyspeptic symptoms of an uncertain and neurotic kind, were excluded from the 102 cases. The transient discomfort, the sinking in the epigastrium, and other symptoms obviously of neurotic origin were not regarded as indicating definite gastric disorder.

Among the symptoms of gastric derangement presented by the cases included in Table II. were the following:—(i.) Constant and continuous pain or serious discomfort, either in the "chest," epigastrium, or in the back, having a definite and constant relation to meals; not directly after food one day and before food the next. (ii.) Other symptoms, such as anorexia, nausea, flatulence, having also a definite relation to meals. (iii.) Evidences of general malnutrition or dystrophy, which the experienced observer can always detect when the assimilation of food is impaired, such as a pinched, thin, haggard look in the face, a dusky complexion, and sometimes definite loss of tissue and weight.

(3) The gastric derangement in the cases in my table was *due to the usual causes*, and it was therefore unnecessary to import neurasthenia to account for it. When enquiring into the origin of the dyspepsia in these cases, I was particularly struck with the frequency with which this was due to defective teeth. Many of the most aggravated cases were due entirely to this cause; and the early age (35, 29, 27, and even 25), at which an entire set would rot away, were facts which caused me some surprise. Next in order of frequency came bolting of food and hurrying over meals, another outcome of the high pressure at which we live. Clerks, skilled labourers, shop assistants, male and female, seemed to vie with each other in the rapidity with which they could bolt their meals. Alcoholism was definitely present in the previous history of some 14 or 15 cases.

(4) We have seen that the symptoms of the gastric disorder which preceded the neurasthenia were of a definite and typical kind, and due to the usual causes. But more than this, the disorder of the stomach belonged to the several different recognised varieties. The greater number consisted of the "atonic dyspepsia" of authors. A few cases (about 12) were acid dyspepsia, or hyperchlorhydria, and these were attended by an aggravated degree of neurasthenic symptoms. Chronic gastritis appeared to exist in about 19, including three cases of cardiac valvular disease. I examined most, but not all, for dilatation of the stomach, and it was certainly present in 17 cases. In these also the neurasthenia was in an aggravated form.

(5) You are well aware that gastric derangements, and indeed all abdominal disorders are very prone to be attended by depression of spirits, general discomfort, listlessness, sometimes restlessness, and many other vague nervous

symptoms; symptoms, in short, which pretty closely resemble those of a mild degree of neurasthenia. You are also aware that many circulatory symptoms, such as palpitation and irregularity of pulse, arise in the course of chronic dyspepsia.[1] These facts are a matter of daily observation. It is not surprising, therefore, that gastric disorders generally should be capable, as I maintain, of producing these same nervous and vascular symptoms in a more pronounced degree—in which circumstances they would be called neurasthenia.

(6) It may be said that proof of the kind which was submitted in reason No. 1, which formed the basis of the table of cases, and which rests on the patient's word, depending, as it does, on his memory, intelligence, and powers of observation, is not very reliable; in short, that the order of events may not be as he represents them. Now it is hardly likely that such a large proportion of patients would have fallen into the same error, but I am able to place before you proof of a still more definite kind, where the physician himself is the observer.

Nothing is commoner in cases of dyspepsia, whether attended by neurasthenia or not, than a tendency to recurrence or relapse; and if it happens that the doctor is in attendance all the while he may observe for himself the advent first of the dyspeptic symptoms and then, in a day or two, or perhaps even in a few hours, of the neurasthenic symptoms. A case of this kind has been under my care on and off for the last two and half years, and I should like to narrate her history to you because it also shows how the symptoms due to definite though slight organic disease may assume an undue prominence in such cases by reason of the hyperæsthetic condition of the patient. It also illustrates how easily the dyspeptic origin of the nerve symptoms may be overlooked.

My patient, a single lady, now (1898) 35 years of age, comes of a nervous family; her brother was one of the worst cases of neurasthenia I have seen. But CASE X. she herself has been comparatively healthy, and has had no serious illness excepting a bad "suppurating sore throat" at the age of 28. She first consulted me in 1896 for a "buzzing" in the right ear, and attacks of "giddiness." These symptoms had troubled her on and off for two years, but latterly the tinnitus had been incessant, and severe attacks of vertigo had occurred twice or thrice a week. According to Dr. Scanes Spicer, who saw the case with me, the cause of these symptoms was a slight otitis media, of so trivial a kind as not to affect the hearing to any noticeable degree. As the nares were very narrow and the tonsils enlarged Dr. Spicer removed the right inferior turbinate bone, and excised the tonsils, with immediate relief of the symptoms. Here the subjective symptoms (tinnitus and vertigo), were pronounced, but the structural changes underlying them so slight that they could be detected only by a specialist. This same disproportion is observable in the nervous symptoms I am about to describe and the gastric derangement to which they were referable.

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[1] My lamented teacher, Dr. Charles Murchison, used to hold that you may get *all* the symptoms of cardiac valvular disease in cases of dyspepsia without any organic lesion of the heart.

For some six or eight years she had been subject at times to attacks of great nervousness, restlessness, sleeplessness, and lassitude, lasting for a few days or weeks, accompanied by a feeling of "depression and stupidity." Sometimes during these periods she dreaded society and would keep her room for days together; at other times she feared to be alone. While abroad in June, 1897, she was laid up for several weeks with a "severe illness," the account of which somewhat resembled a series of attacks of pseudo-angina pectoris, consisting of painful "constrictions of the chest," attended by alternating pallor and flushing. These seizures were accompanied by painful "red blotches" on the skin, "like big nettlerash," which left "bruise-like stains" (? erythema nodosum). These symptoms are interesting as indicating the vaso-motor instability which is so marked a feature in many of these cases.

I was unable for a long while to account for the neurotic seizures that had troubled her, but in the autumn of 1898, when she was laid up with a severe attack of piles, I saw her constantly with her local doctor and had the opportunity of observing one of these seizures. It was preceded by an attack of dyspepsia—the symptoms being nausea, loss of appetite, pain in the epigastrium and fulness after eating. This was followed in two or three days by a definite recurrence of the neurasthenic symptoms just mentioned, which reached their maximum on the third or fourth day and declined pari passu in the course of ten days; first the dyspeptic and then the nerve symptoms, both improving under bismuth. Bromides, which had formerly been given to relieve the nerve symptoms, were purposely withheld, so that we might see if they would yield to simple gastric remedies. She then informed me that her "nervous attacks" had always been preceded by some such disorder of the stomach, but that this had not been considered of any importance in comparison with the "horrible nervousness," &c.

In this patient, who was nervous by heredity, the tinnitus and the vertigo in the first place, and the neurasthenic symptoms in the second, were both out of proportion to the otitis and the dyspepsia which had respectively produced them; and the case shows how easily an organic cause may be overlooked. The symptoms of dyspepsia may be masked by those of neurasthenia, because to the patient these latter are far more troublesome; and it must be remembered that for both groups of symptoms we are entirely dependent on the patient's account of them. But the dyspepsia is not always so ill-marked as it was in this patient, and in such cases, which are by no means uncommon, we see before our very eyes that the order of events is first indigestion and then the development, pari passu, of neurasthenic symptoms.

(7) It is a clinical fact of considerable importance that the neurasthenic symptoms in many of these cases were definitely related to, and considerably worse after, meals. In quite a number of cases they appear only at such times.

Indeed, patients not infrequently speak of these outbursts of symptoms—the nervousness, prostration, and the various other indescribable sensations of bodily illness—as "attacks" or "fits." The physician is apt in such cases to be misled into supposing that he has to do with hysteria, or some other paroxysmal disorder. But careful enquiry shows that they are not really "attacks," they are merely an exacerbation of the symptoms, and there can be little doubt that they are due to a shower of the toxic materials which enter the blood during the absorption which takes place after a meal.

In this connection, I should like to mention a somewhat remarkable case, which I saw several times in consultation with Dr. Jekyll, of Leytonstone, in 1897 and '98.

CASE XI. The patient was a gentleman aged 32, married, but with no children. He was a merchant who had travelled a good deal for his firm, and had been in the habit of taking hurried and irregular meals all his life. He denied alcohol, but it seemed probable that a certain amount of drinking had been incidental to his business. For many years he had been subject to severe indigestion from time to time, and for about eighteen months he had suffered from alarming "attacks," coming on about once or twice a week, always after meals. He was a most intelligent man, and I asked him to describe these attacks to me. They always began from five to fifteen minutes after a meal. "First of all," he said, "I have a twisting feeling in the stomach. This is followed, a quarter of an hour later, by shooting pains in the head; and then ten or fifteen minutes later I have an awful and indescribable feeling all over me, as though I were going to burst, and I then begin to make an ass of myself." During these attacks he could not sit still, could not concentrate his attention on anything for a single moment, and a "horrible indefinable dread of impending death" came over him. In these attacks his wife said he at first got pale, and that he acted and seemed like a madman, wandering about the room, doing and saying the strangest things. They lasted from one to several hours, and were followed by the passage of a large quantity of pale urine. Between the attacks, he had been subject to nervousness and to headaches. The memory had lately become less reliable, and his sleep disturbed. His temper also had become irritable, and from time to time he had "slight indications of the same symptoms" as those which appear during the attacks. How he only got these seizures when his stomach was very seriously "out of order," and they were worse and more frequent in proportion as the dyspepsia was more severe. Unfortunately, very little upset his stomach.

By paying strict attention to the diet, and by the administration of remedies directed to aid the digestion, the gastric disorder was slowly improved; the nervous symptoms (between the attacks) were gradually relieved, and the definite seizures became less and less frequent. At the present time (1898) Dr. Jekyll tells me that if he lives a rigorously hygienic life, and pays strict attention to his diet, he remains free from these most alarming symptoms.

CASE XII.

I have met with many other cases presenting this same feature—exacerbations or "attacks" after meals—in a milder degree; and this point is of so much importance that I should like, at the risk of appearing tedious, to mention a similar case under my care at the present time (1898). The patient is a lady, aged 35, who used to have what she termed "attacks" after meals consisting of dizziness, a feeling of numbness in the extremities, stiffness and heaviness of the limbs, a dread of being alone, and other symptoms of neurasthenia. Sometimes in these attacks she used to complain of a "horrible feeling as though she were sinking through the floor," or "through the bed" if they came on at night. She had consulted several eminent neurologists without procuring relief, probably because the evidences of dyspepsia were not, in her case, very pronounced, and thus the true origin of the mischief was not recognised. She was thought to be suffering from some form of "hysterical seizures." Nevertheless, when the digestive organs were put in order, all the neurasthenic symptoms disappeared. They still, however, return when she commits any grave indiscretion in diet.

We see then, that not only are a large number of cases of neurasthenia associated with dyspepsia, but the symptoms may be definitely aggravated by meals; the patient, and perhaps even his medical adviser, thinking that he is suffering from some paroxysmal "nervous" disorder.

(8) I have laid before you several very cogent reasons in support of my contention that digestive derangement may, under certain circumstances, be a potent cause of neurasthenia, but the one which has carried greater conviction to my own mind than anything else—because it has been so constantly present as week by week I watched the progress of cases—was this, that as soon as the indigestion improves the neurasthenic symptoms begin to disappear. It is true that bromide often relieves them for a while, but until dietetic and medicinal means are employed against the dyspepsia, the nerve symptoms infallibly return. Moreover, if the gastric derangement reappears, even after many months' interval, the neurasthenic condition very often returns also. Did time permit I could narrate many instances in proof of this, but I will content myself with referring you again to the two cases I have just given, in which this happened in a notable fashion. Both of these cases had been under nerve specialists, who, regarding the dyspepsia either as an accident of the situation or as part of the nerve condition, directed their attention solely to the latter and so failed to give the patient relief.

These, Gentlemen, are the grounds on which I base the statement that, in a certain proportion of cases at least, neurasthenia may arise as a consequence of gastric disorder. From the relatively large number of cases I have collected at this hospital in a short space of time, it would seem to be a by no means infrequent cause of neurasthenia, among the class which come as out-patients to this hospital.

The next question which arises is this, how, and in what manner does dyspepsia produce neurasthenia? This is a most important question, and one which I will ask you to investigate with me now. I may state, at the outset, my own view is that gastric disorder produces neurasthenia by an autotoxic condition of the blood acting on the nervous system. It may be that, in some cases, a contributory cause is necessary which renders the nervous system inherently weak; but this latter does not seem to be absolutely necessary, since the toxic products of digestion may have a specifically poisonous effect on nerve structures. This suggestion is rendered more probable by the frequent occurrence of prostration and other nervous symptoms with all derangements of the alimentary canal. I am not prepared to say that malnutrition, also a result of the derangement of digestion, does not play a contributory part; but this does not appear to me sufficient to explain all the clinical phenomena, and especially the exacerbations after meals. In support of the toxic theory there are two important series of facts.

The first is this, that the leading and most constant symptoms of neurasthenia correspond with symptoms known to be due to toxic conditions of the blood. A moment's thought will show that this is so, and that the headache (which so frequently accompanies pyrexia and other toxic conditions), the disturbed sleep, the restlessness, nervousness and prostration, the hyperæsthesia and pains, the irritable temper, the readiness with which they are startled and become tired, the defective memory and lack of attention (which are among the first faculties of the mind to disappear in all exhausted states), may all be found in other morbid conditions known to be due to blood disorders, such as pyrexia, lithæmia, gout, rheumatism, acute and chronic alcoholism, and the like.

Secondly, that the diseases which most closely resemble neurasthenia in their clinical features are known to be due to an altered blood state. Take *lithæmia* for instance, one of the commonest of toxic blood states. Many of the symptoms of neurasthenia have so strong a resemblance to those of lithæmia, that there is sometimes considerable difficulty in the diagnosis between the two conditions.

Influenza is another blood disorder, and one which the profession has had ample opportunity of studying of late years. Sometimes it attacks mainly the lungs, at other times mainly the alimentary canal; and as you are well aware, one of the commonest forms of the disease is that in which it attacks the nervous system. Now it is in such cases one meets with one of the most complete examples of neurasthenia that it is possible to find. Here you get the nervousness, prostration, irritability, restlessness, and other symptoms of the disease in their most typical form. We have here the very group of symptoms we are studying, produced by a specific bacterial toxin.

It would hardly be necessary to go farther in search of proof were it not for a very interesting point which arises from the comparison I am about to draw between neurasthenia and *Graves' disease*. The symptoms of this malady consist, as you know, of thyroid enlargement, proptosis, with vascular, and numerous nervous symptoms. These latter are of considerable importance, and usually appear early in the disease. It is for this very reason that a large number of these cases come to this hospital for relief. Now, there is a very striking resemblance between the symptoms of neurasthenia and the nervous and many of the vascular symptoms of Graves' disease, if indeed they be not identical. Recent researches into the subject of "Internal Secretion" have shown that this disorder is due to a faulty action of the thyroid (one of the internal secretory organs), and therefore this disease is essentially an altered condition of the blood.

Gentlemen, this comparison is a most instructive one, for it is more than probable that the blood defect is of a widely different kind in the two diseases. Nevertheless, the nerve symptoms are practically identical. May this not be owing to the fact that it is the same part of the nervous system which is principally affected? And may not this part be the sympathetic nervous system? I hope to show you, at our next meeting, that this is so.

In conclusion, Gentlemen, I wish once more to emphasise two important facts. In the first place I would once more remind you that neurasthenia is dependent on many other conditions besides dyspepsia, as we shall see at our next meeting. In the class of patients met with in the outpatient practice of this hospital, these, in my belief, form the majority, but in the private clientèle of many, toxic neurasthenia is, after traumatic, the rarest among our pathological groups. You will remember also that some observers state that the functional disturbance of the involuntary muscular tissue of the stomach, and of its secretory glands, is quite sufficient to account for all such symptoms, without the necessity of introducing dyspepsia into the question at all.

The second point I wish you to remember is that the diagnosis of the condition I have called "dyspeptic neurasthenia" from "gastric neurasthenia," is not always the easy matter I have depicted. The problem whether we have before us a case of neurasthenia due to disorder of the digestion, or neurasthenia with symptoms referable mainly to the stomach, is often one of considerable difficulty. Herein lies the weakness of some parts of my argument. When discussing this question, I gave you the clinical features on which you could rely (p. 56, and Reason 2, p. 59); but, sometimes the problem is one of extreme difficulty, and can only be solved by a very thorough investigation at the hands of an experienced physician, and by carefully watching the case from day to day.

The inference from this is that the treatment of such cases should never be undertaken excepting under the supervision of a medical man. It is within my knowledge, and I say it with regret, that a certain section of the public, with more money than sense, is a prey to unprincipled charlatans who, by playing upon the patient's fears, and adopting elaborate local treatment, combined with "rubbing" (which in certain cases and under supervision is of undoubted benefit), keep the patient under prolonged treatment, until perhaps the disease comes to its natural termination in a permanent invalidism, dementia, or death, or occasionally, a tardy recovery. Patients with exhausted frames, and exhausted purses also, have from time to time consulted me in circumstances such as these, who have reached a late stage of disease—the case of hypochondriasis, now beyond retrieve, whom I brought before you, was one of these—and I have not known what to do or what to say. The longer this disease lasts without adequate treatment, the more firmly established does it become, and the more likely is it to result in hypochondriasis, or some other incurable condition.

It is matter for regret that in England there is no legal process to check such procedures. This, however, is all the more reason why the profession as a body should be prepared to deal with all and every ailment, no matter how trivial or vague it may be; and it is all the more reason why a profession, having such a noble aim as the common good of all mankind, should combine in this and other ways to oppose unprincipled persons who trade upon the ignorance, the weakness, and the frailty of humanity.

LECTURE IV.

THE PATHOLOGY OF NEURASTHENIA *(CONTINUED)*: AND ITS TREATMENT.

SUMMARY:—*Review of the subject.—Malnutrition neurasthenia usually a predisposing cause.—Fatigue neurasthenia.—Emotional strain.—Traumatism.—Case.—All forms clinically alike.—The reason of this.—Explanation of symptoms.—How these various pathological conditions affect the sympathetic system.—Modern increase in the disease; its reasons.—Treatment; indications in the several groups; importance of detail.*

GENTLEMEN,—Last time we met we were considering the pathology of neurasthenia; and you will remember that, for this purpose, cases of this disease might be grouped into four groups.

I.—In the first group, faulty digestion (to which there was often added prolonged and obstinate constipation)[1] lead to *a toxic state of the blood,* which acting on the nervous system—either alone, or in combination with some factor which had rendered the nervous system less resistant—produced neurasthenia. This constituted what might be called "Dyspeptic Neurasthenia," and it included a large proportion of the cases which come to the out-patient department of this hospital.

II.—In another group (Malnutrition Neurasthenia), *deficiency of the general nutrition* of the body acting on a nervous system specially predisposed or enfeebled, either by heredity, over-work (nerve-strain), or disease, results in neurasthenia. As examples of this group, there are the cases which follow exhausting illnesses of any kind.

III.—In other cases (Fatigue Neurasthenia) *exhaustion of the nervous system* produces neurasthenia, the digestive and other organs of the body being healthy, there not being in such cases any necessary predisposition in the nervous system. This includes the neurasthenia so frequent among medical men and other professional classes. But even in this group this cause may act in combination with one or more of the others.

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[1] Other conditions leading to a toxic condition of the blood (*e.g.*, influenza) result in Na, in the same way, but the opportunities for their study are very limited.

IV.—Finally, there is a class of cases where the nervous system, being (usually) debilitated or predisposed in some of the ways just mentioned, presents all the signs of neurasthenia consequent on some *prolonged or sudden and severe emotion*, such as grief (Emotion Neurasthenia); or the shock of some accident (Traumatic Neurasthenia).

In all of these groups an important predisposing cause *may* be present in the shape of an inherent weakness of the nervous system, usually the result of *inheritance*.

I devoted so large an amount of time to the consideration of the first of these groups partly because we have here special opportunities for its study, and partly because the conclusions I arrived at are at variance with those of several eminent observers. But, gentlemen, undoubtedly the participation of the stomach is not necessary, because one meets with many cases where the stomach is not affected and where there are not, and never have been, any gastric symptoms.

It remains for us to consider the pathology of the three remaining groups now; and to ask ourselves four questions:—

1st, How do these several conditions come into operation?

2nd, Are there any means of differentiating them clinically from one another?

3rd, Why is it that the same symptoms arise under such different conditions; and how does the sympathetic system come to be so much affected in each?

4th, What is the explanation of the increase in the disease in modern times?

II.—*Malnutrition Neurasthenia.* The neurasthenia which arises in association with a deficiency of the general nutrition of the body is seen most typically during the convalescence after acute specific fevers or other exhausting illnesses. I have already shown you an example of this kind of neurasthenia in the case of the engine-fitter (Case 3, Lecture II.), who had developed a severe attack after influenza two years previously.[1] The influenza was obviously very severe, and its proneness to affect the nervous system was seen also in the facial paralysis which followed closely upon it.

The point which is most noteworthy about malnutrition neurasthenia is that general malnutrition appears incapable, as a rule, of acting as a cause alone. This is what one would expect, for there would otherwise be no reason why the nervous system should be more affected than any of the other physiological systems. But post-influenzal neurasthenia appears to be an exception to this; and the explanation is probably to be found in the special affinity which the toxin of that malady appears to have for the nervous system. You know indeed that in one type of influenza the symptoms are all referable to the nervous system (under which circumstances they very closely resemble neurasthenia), and in all cases of influenza the subsequent weakness and "nervousness" are often out of proportion to, and far more distressing than, the original malady. In view of all these facts, it seems probable that in post-influenzal neurasthenia we have one more illustration of a compound cause, partly toxic, partly malnutrition.

General malnutrition, like the inherent weakness of the nervous system due to heredity, is more often met with as a predisposing than an exciting cause of neurasthenia. You have, no doubt, seen many cases where general debility has been unaccompanied for a long time by any nerve symptoms until a severe bereavement, or some degree of over-work, has determined their occurrence.

Deficient nutrition of the nerve cells may be in operation in "dyspeptic neurasthenia"; but, for reasons already stated, I do not think it can, alone, account for all the phenomena.

III.—The neurasthenia due to over-functioning, or as it may be conveniently called "*Fatigue-neurasthenia,*" is due to exhaustion of the nerve cells, and you will remember that I likened the nervous system in these circumstances to a faradic battery which had been in use for several hours without intermission. It is this variety of the disease one meets with chiefly among the better classes of life. It is doubtless the commonest of the varieties met with in the private *clientèle* of all of us, and I need not bring any fresh cases to your notice beyond the three which I quoted to you at our last meeting.[1]

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[1] The neurasthenic symptoms which arise *in the course of* influenza belong of course to the Toxic group.

Increased function, if regularly and gradually increased, leads first of all to increased growth; but if carried to excess, and especially if irregular and spasmodic in the increase, it leads to atrophy and degeneration of the structures concerned, and if perpetuated leads to overgrowth of the structures around. This is an old pathological principle which has recently been revived under the name of Edinger's law.

In this connection it is worth remembering that all functions of the body are dependent upon the nervous system, and therefore it is a mistake for a person to think that he can rest his brain after vigorous and exciting operations, on the Stock Exchange, for example, or in medical practice, by taking a thirty or forty mile bicycle ride into the country. We have not two brains, and we have not two nervous systems, one for the workings of the mind and another for controlling the muscles. These facts should be remembered when selecting the kind of rest and recreation required in any particular case.

IV.—How an *emotional strain*, such as the bereavement which was in operation in the case of a woman whom I brought before you on a previous occasion,[2] produces neurasthenia is not quite so easy of explanation. It may, however, be borne in mind that the effects of a sudden severe emotion are often very much like those of exhaustion (or over-functioning); and both are capable of producing complete generalised weakness, a general inability to move the limbs (prostration, collapse, or shock), of a more or less transient kind. Both seem to paralyse the motor cells, and if this be so, why should not the same effect be produced upon the non-motor cells of the brain, cord, and sympathetic system?

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[1] Lecture II., a clerk in the Civil Service and two children.

[2] Lecture II. ante.

It sometimes happens, as in the woman just referred to, that the resulting neurasthenia is of a very lasting character (two years in that case), and the question arises why should this effect last so long? Now of course the grief or anxiety may be in continual operation all the while; but even apart from this, recovery depends on the state of nutrition and power of recuperation of the individual, and although the cause may be removed the nervous system may not recover.

Traumatic neurasthenia.—That neurasthenia may be determined suddenly by a severe injury has only been admitted within the last few years, but there is no doubt that it may be so. It is, however, a curious circumstance that the neurasthenic symptoms do not necessarily follow immediately on the injury; there may be an interval of several weeks, or even months. In such cases I am inclined to think that there is very often some other contributory cause, albeit of a trivial kind, which takes longer to act, or comes into operation later.

In traumatic neurasthenia it is not the injury itself, but the emotional shock, the fright, or the sudden emotional effect which really produces the disease. Indeed the nerve symptoms are often more serious when no surgical effects arise, because then the patient attempts to resume work immediately. Consequently, the pathology of traumatic neurasthenia resembles that of an emotional neurasthenia, brought very suddenly into operation, of short duration, but very concentrated while it lasts.

The nerve symptoms which arise in cases of railway accidents and injuries to the spine (railway spine) or head, have afforded ample material for the study of traumatic neurasthenia, and on this subject I would refer you to the valuable contributions of Mr. Herbert Page.[1] The neurasthenia which follows injuries to the spine afford some of the best and purest examples of "spinal neurasthenia" we meet with.

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[1] "Injuries of the spine and spinal cord." Herbert Page. Churchill, London, 1885.

The question which arose in emotional neurasthenia occurs with even greater force here; why should a transient cause produce such a lasting effect? But here again recovery depends on the state of nutrition of the body and its power of recuperation. In the aged and those debilitated from some cause, this is much below par, and recovery may be indefinitely postponed. Thus, I have mentioned to you an interesting case of an eminent scientist, of over 70 years of age,[1] who developed neurasthenia consequent on a cab injury; and you will remember that he died without recovering.

The case of the policeman who incurred the disease while on traffic-duty (Case I.) also comes into this category, for this patient was subjected to a series of emotional shocks.

I should like to narrate to you an interesting case which came under my observation some years ago, and which attracted a good deal of attention, because the patient, a cabman, was driving, at the time of his injury, a well-known metropolitan police magistrate.

CASE XIII.

The patient was 43 years of age, without any neurosis or facts worthy of note, either in his family or previous history. On October 15, 1884, he was driving his cab over Putney Bridge, when a brewer's dray ran into him, knocked him off the box, and turned the cab over. In falling, he struck his head and his side. He did not lose consciousness, but, getting up, walked over the bridge, procured another cab, and drove his fare a distance of two miles. This was about 5 p.m.; and at 8 o'clock, after getting home, he sent for a doctor, who told him that he had two ribs broken. He was in bed for three weeks, and was attended by the doctor for eight weeks. He felt very weak when he got up, and did not recover his health. He suffered considerably from sleeplessness and dreams, in which the scene of the accident was repeated. He was also troubled much with "singing in the ears" at night, and in the daytime he was "nervous" and "shaky," and found it difficult both to see and to hear. In the course of a few months he tried to resume his occupation, but was unable to drive, partly by reason of pain in the side, but chiefly by reason of timidity in driving, and on account—though when pressed he could not give a name to them—of the "horrible fears" which came over him, especially towards the evening. If he attempted to go out after dark a "horrible dread" seized him, and he "shook all over." I did not see him until a year after this (August, 1885), when much the same symptoms still remained. He professed himself to be almost deaf in the right ear, unable to hear a watch until it touched the ear. His vision too, he said, was defective, for he could not "see things at the side" of him. There was no error of refraction, and the ophthalmoscope revealed nothing. All the organs were normal, but there were signs of an old fracture of two of the lower ribs on the right side, at the seat of pain. He complained also of a feeling of fulness after meals when he felt more "tired" than usual; the appetite was good and there was no vomiting. The urine was normal. The matter had now come before one of the High Courts, and a considerable sum for damages was claimed, the patient being brought to me for a second opinion. I examined him thoroughly and could find no physical signs, excepting, first, a zone of hyperæsthesia around the middle third of both legs; and, secondly, a retraction of the fields of vision, most marked in the right eye. I submitted these signs to repeated tests, and came to the conclusion that they could not be the result of simulation. I also tested his fields of vision on several days and at different hours of the day, and found that they were more retracted towards the latter part of the day, particularly if he had taken, for him, much exertion. Under cross-examination I gave this report at considerable length in court, and full damages were awarded.

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[1] Lecture II.

This case seems to me one of considerable interest, as being entirely due to the shock of the accident. The dyspepsia might perhaps have contributed slightly, but the gastric symptoms were such that they might very well have been part of the neurosis, and they had only come on quite recently. The symptoms came on immediately after the accident, and persisted. They remained also for some considerable time after the trial, until he went away into the country for three months. Not the least interesting feature of the case was the retraction of the fields of vision, which certainly helped more than anything else to establish the reality of the affection; and affords one of the best illustrations of the value of rest in such cases. It seems, also, to show that in cases belonging to the group under consideration we have to do with a veritable exhaustion of the nerve cells; for after rest the retraction of the fields became less, and *vice versâ*.

If you will bear with me, gentlemen, I should like to mention one more case, one which was the result of a most extraordinary accident, and illustrated a most miraculous escape. CASE XIV. Mrs. Z——, aged 41, a professional singer and pianist, was walking along the street in Chicago one day in April, 1897, when an entire pane of plate-glass, blown out by the banging of a door, fell upon her head from one of the seventh floor windows. Fortunately it turned sideways as it dropped; but the force of the blow felled her to the ground, where she lay, for ten or fifteen minutes, unconscious. She got up and walked home with assistance, and then had a "shivering fit" which lasted four hours. Ever since that time she has suffered from severe and persistent headache radiating from the left temple, which was the part struck, a feeling of extreme exhaustion, extreme nervousness, sleeplessness, "horrible dreams," "pains and weariness in the spine," loss of memory, confusion of thought, and complete inability to sing or play the piano. At the time of the injury there was a good deal of swelling and bruising over the left temple but no fracture or paralysis anywhere. She came under my care six weeks later, and it seemed to me probable there had been some meningeal hæmorrhage, for besides extreme tenderness over the left temple, and inequality of pupils, the right hand was affected by a fine tremor and some stiffness, so that she could not write. These symptoms passed off in a few weeks; but the prostration, sleeplessness and other neurasthenic symptoms had persisted up to August, 1898, when I last heard from her.

The next question we have to consider is whether there are any means of clinically differentiating these four groups. The symptoms, as you have seen, are apt to vary widely in different cases, no matter what the cause, but I cannot mention to you any symptoms which belong to one group and not to the other. I have frequently thought that whereas the neurasthenia of traumatism—where the head or the spine is injured, as the case may be—belonged more to the cerebral or spinal type; that of fatigue belonged more to the spinal type, and that of toxic blood states and malnutrition tended to be of a mixed type. But, I have hesitated to accept any but the most definite evidence on this point, because this is just what one would expect to find on *à priori* grounds. I have certainly found in traumatic and fatigue neurasthenia that the symptoms were mainly referable to the parts which have been injured or fatigued respectively; though, even here, they were by no means confined to those structures. Apart from these considerations the symptoms which come into prominence and the portion of the nervous system most affected, seem to depend mainly upon the constitution, temperament, or, if I may use the word, the idiosyncrasy of the individual.

Some observers divide neurasthenia into an endless series of varieties; but I fail to see the advantage of this. For instance, authors sometimes speak of gastric or cardiac, or pulmonary, and other varieties of neurasthenia according to the principal organ affected by the symptoms of the disease. But this does not seem to me scientific, for it is undoubtedly a general disorder and all of its symptoms are manifested through the nervous apparatus. I am inclined to follow Beard in making only three types of the disease, the cerebral, the spinal, and the cerebro-spinal; and for purposes of treatment this is sometimes useful, but even here no hard and fast line can be drawn. In actual practice, the previous history of the patient will generally enable us to identify to which of the four pathological groups his case belongs; and this after all is the most important matter, both for prognosis and treatment.

The next question before us is—Why should the same symptoms arise from such different causes? How is it that the same disease arises under such different conditions as gastro-intestinal disorder, malnutrition, over-functioning, emotional strain, and traumatism? Now, gentlemen, I believe the answer to this question is that the nerve structures mainly involved in each case are the same; and that these structures are the vaso-motor and sympathetic systems. It seems to me that this is the part of the nervous system principally and primarily affected, and that all the symptoms, as well as the vague and variable qualities which belong to many of them, can be explained in this way. No doubt the cerebral and spinal structures suffer as well and are directly affected in many instances by the over-functioning, malnutrition, or toxic blood state as the case may be; but it is the disorder of the vaso-motor and sympathetic systems from which the most important and constant symptoms and consequences arise. We know so little of these most important systems that the matter will merit studying somewhat closely and in detail; and we will ask ourselves, *First*, What symptoms are directly referable to these systems? *Secondly*, Can all the symptoms be explained on the above hypothesis? and *Thirdly*, How does the sympathetic system come to be affected in each of the four pathological groups?

Symptoms directly referable to that part of the sympathetic system concerned in regulating the circulation are certainly very common, if not the commonest, in neurasthenia.[1] Several of the cases shown to you at our last meeting illustrated this; but the matter is so important that I must at the risk of appearing tedious, show you three other cases taken haphazard by way of example, from a large number.

Here is a man, George B——, aged 42, who came to the

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[1] Beard himself points out the prominent part played by the sympathetic system. His theory is that the symptoms of neurasthenia are due primarily to a want of cerebral control. Consequently the vaso-motor centre not being under cerebral control becomes very unstable. The cardio-vascular system, having most sympathetic nerves, shows the symptoms most.—Neurasthenia, Beard and Rockwell, 1891.

CASE XV.

hospital complaining of "nervousness" and the usual concomitant symptoms. He also complained of "general flushings and burning feelings," followed by "pallor and coldness;" "dizziness and things going round," "swaying about and weakness" when he walked, and "inability to go on with his work" (that of a commercial traveller), on this account. At night, on going off to sleep, he had "a feeling as though he was falling through the bed, and other horrible feelings," then "lying awake thinking dreadful thoughts," or dropping off to sleep only to "dream of his funeral," &c. There was a long history of gastric symptoms.

CASE XVI.

Here is another case, John C——, aged 24, a painter, who also had a long history of symptoms referable to the stomach. He came for nervousness and pains in the head which had troubled him for two years. He also complained of "flushings" followed by a feeling of intense "exhaustion" whenever he took any exertion, and also of agoraphobia, sleeplessness, dreams, and nocturnal emissions once or twice a month.

CASE XVII.

Arthur W——, a clerk, aged 21, complained of being nervous, and of attacks of flushing accompanied by a "feeling as though he would burst" chiefly towards evening and at night; loss of confidence in himself; being slow at his work; listlessness, prostration, and occasional giddiness and reeling. He says his hands and feet are liable to be very cold on some occasions, but feel burning at others.

These are a few illustrations taken without selection from a very large number of patients who presented definite vaso-motor symptoms. In point of fact, careful inquiry—without of course putting leading questions—will in my experience invariably reveal some such symptoms in all cases of neurasthenia.

But I think we can go further than this, and say that all, or nearly all, of the symptoms of neurasthenia are capable of being explained by a derangement of some part of the sympathetic or vaso-motor systems. How else can we explain those vague general somatic sensations, those feelings of intense bodily discomfort? And how are we to explain the variety, the diffuseness, the inconstancy and inconsistency of the symptoms affecting now one part, now another, of the body? The flushing and pallor of the skin we can see for ourselves, but may not the same flushing and pallor take place internally, in the various tissues, organs and internal parts of the body? It is by the relative amount of blood entering an organ that its nutrition and its functions are regulated; and if the flushing or pallor of an organ takes place irregularly and at the wrong times, its functions must be manifestly upset and its nutrition will soon become impaired.

The reflex muscular irritability so noticeable in some cases—the restlessness, muscular twitchings and startings, the want of control over the legs and general nervousness—may well be accounted for by irregular flushings or pallor of the *spinal cord*. The rapidity and irregularity of the pulse, palpitation, sighing respiration, prostration, feelings of swelling, acroparæsthesia, tingling, heaviness, feeling of "bursting," and sometimes swelling of the extremities, may all be accounted for by irregular flushings of the *limbs*. The disagreeable feeling of sinking through space, reeling, swaying, "dizziness" or vertigo, agoraphobia, claustrophobia, and the like, may very well be accounted for by irregular flushings or pallor of the *semicircular canals* and structures around; in the same way as the increased flow of urine which follows the paroxysms that are met with in some cases may be explained by flushing of the *kidneys* and *splanchnic area*.

Finally, in that variety of the disease which some observers call "gastric neurasthenia,"[1] may not the gastric symptoms which imitate true gastric disorder be accounted for by sudden irregular flushings or pallor of the mucous membrane of the *stomach and intestines*?[2] The dilatation of the stomach, which according to some is a frequent accompaniment of neurasthenia, would be readily accounted for on the above theory by paralysis of its muscular tissue; and the constipation, which is certainly present in a large number of cases, by paralysis of the bowel. This I believe to be the explanation, already adopted by many, of these two symptoms. The great frequency of gastric and abdominal symptoms in the disease—*e.g.*, the "sinking feeling in the pit of the stomach" which is such a characteristic complaint—and the prolapse of viscera which some have described,[1] would thus be accounted for by the large amount of involuntary muscular tissue, and the great sympathetic ganglia, found within the abdomen.

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[1] In which the leading symptoms are nerve symptoms referable to the stomach.

[2] Some French authors have included certain cases of hæmatemesis under neurasthenia; if the above view is correct such cases can be explained.

Turning to the cerebral symptoms, such as confusion of thought, loss of memory, irritability of temper, broken sleep, bad dreams, nameless fears, "horrible thoughts," sometimes hallucinations, a "bursting" feeling in the head (the casque neurasthenique), forgetfulness, inattention (and consequent inability to do business); these may be due either to the irregular flushings of the *brain* or to the direct action of the toxic blood (in toxic neurasthenia) on the cerebral structures.

It may be replied to this that some of these symptoms tend to become very permanent and stable. But it must also be remembered that in the brain—and the same remarks might apply to other parts of the nervous system—we have an organ consisting of soft, friable, unstable, and most delicate material, and that on this account a severe congestion or pallor might produce more serious and more lasting damage, and therefore more persistent symptoms. Moreover, in some cases the toxic quality in the blood is continuously present.

But, you will say, how are we to account for the *pain* and some of the other sensory troubles? Now, in the first place, I am inclined to think that Beard's suggestion that the pains may be produced by local congestions is a not unreasonable one.[2] In the second place, it should also be remembered that pain of a neuralgic character, as we understand it, is not such a frequent symptom as one would imagine, for the term "pain" is most vaguely used by patients to describe any feeling of discomfort. This more often takes the form of tingling, prickling, formication, and the like; symptoms which I have on many occasions pointed out to you are generally associated with local vaso-motor disturbances. Even when actual pain is complained of, it is found very often to consist of a dull weary aching like that met with in over fatigued muscles, which may probably be explained somewhat after the same fashion.

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[1] Glénard. [2] *Loc. cit.*

As regards the *sensorial troubles*, the hyperæsthesia, contracted fields, &c., these are readily accounted for either by the increased sensitiveness, or the fatigue of their centres owing to the irregular blood supply, and in toxic neurasthenia, to the altered quality of the blood.

In short, gentlemen, as regards the bulk of the symptoms, there is nothing which explains all the symptoms so well as vaso-motor and sympathetic disturbance; and nothing which affords so satisfactory an explanation of the variations from time to time, and day to day in the degree and character of the manifestations. For the truth of this theory it is not necessary to show that all patients complain of flushings of the surface, because different tissues and organs may be affected in different individuals. In one it may be the brain, and then mental symptoms predominate; in another the cord, and then restlessness and neuro-muscular irritability are more pronounced, and so on.

In all probability the same vascular irregularities occur in all the other physiological systems, and hence the endless variety of the symptoms and sensations; and the feeling, as more than one patient has put it "as though his whole inside was in a whirl," "the inability to think for two seconds together,"—and the general want of harmony and co-ordination in the economy.

The next question we have to consider is how the sympathetic and vaso-motor systems come to be affected alike by such different conditions as toxic blood states, malnutrition, over-functioning, and emotional shock? It will be best for us to consider these *seriatim*.

First, as regards *toxic blood states*, considering the intimate relation between the blood and the vaso-motor nerves, it is not at all surprising that the vaso-motor mechanism and other parts of the sympathetic system should be disturbed. Indeed, there are physiological grounds for believing that the vaso-motor regulator mechanism is to a large extent influenced by the composition of the blood from time to time.

Secondly, why *malnutrition* should specially affect the vaso-motor and sympathetic system is perhaps, at first sight, less readily understood. But I would ask you to remember that it is the involuntary muscular tissue—in the arteries especially, but throughout the body also—which is the first to show the signs of the wear and tear of life, and to give way in the aged, as the human economy progressively decays.[1] It is therefore only natural that this very tissue should be the first to show signs when the body generally is enfeebled owing to malnutrition. Now, it is the vaso-motor and sympathetic nerves which supply and control this tissue, and it is only reasonable to infer that the sympathetic system is more apt to be involved—more apt to show evidences of malnutrition or fatigue—than the other parts of the nervous system, and of the body generally.

Thirdly, in *fatigue-neurasthenia*, the same reasoning applies. It is evident, as we have just seen, that the involuntary muscular tissue and the sympathetic system are specially susceptible to conditions in which there is a strain upon the nutrition, such as occurs in over-functioning. But, here it is possible that we have a contributory cause, in the shape of toxic effects produced on the nervous system by disintegrating nerve tissues. Physiologists teach us that one of the main reasons why tired muscles become "fatigued" is on account of the excess of muscular waste present in them, and there seems no reason why the same line of argument should not apply in the case of the nervous system.

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[1] By the use of acid-orcein and special methods of staining, the involuntary muscular fibres of the arteries and intestinal canal can be shown to be the seat of degenerative changes long before any other tissue of the body.

Fourthly, in the neurasthenia of *emotional strain*, the reason why the vaso-motor and sympathetic systems are specially involved is at first sight somewhat difficult to assign. I would remind you, however, of the very close association which exists between the emotional functions of the mind, the sympathetic system, and the involuntary muscular tissue. Thus, it is a matter of common observation that fear is manifest by pallor, shame by flushing of the face; and, experimentally in the laboratory, stimulation of the dorsal branches of the thoracic sympathetic in the cat will produce the erection of that ridge of hair along the back which is so characteristic of the angry cat. These facts show that the sympathetic nerves and involuntary muscle fibres are controlled by, or at least very intimately connected with, the emotional functions of the mind; and it is only natural that any disorder of the latter is manifested by disturbances of the former.

Traumatic neurasthenia admits, as we have seen, of the same reasoning as the neurasthenia of emotional strain, for it is the emotional shock at the time of the injury which produces the effects on the nervous system.

There is still one question in connection with neurasthenia which is perhaps worthy of more prolonged consideration than we can give it this afternoon, namely, Is neurasthenia a new disease? or, if not actually new why has it increased so much in modern times?

Now it cannot be regarded as a new disease; and, as already stated, there are good reasons for believing that it was formerly confused with hysterical conditions. But even allowing for improved methods of diagnosis, there can be but little doubt that the number of cases of neurasthenia has considerably increased. At this hospital alone, more cases of the disease apply among the out-patients than all other diseases put together. Now, what is the cause of this increase? Is it a product of our modern civilisation? Is it a product of the evolution of the race? After fully considering all the various causes which may produce this condition, there can be no doubt that the increase in the disease, at any rate among the upper, and the great middle classes, is largely due to the relatively greater "pace" at which we live. The introduction of railways and other improved means of communication, the large proportional increase of town-dwellers as compared with the rural folk, all tend to largely increase the rate at which life is carried on. This is especially so in the Metropolis, where nearly every other person you meet seems to be trying to get two days' work into one.

But, gentlemen, I do not by any means think that this is the only cause; nor indeed the chief cause among the masses of the population, and in the class which constitutes the bulk of the hospital out-patients. In modern times the increased prosperity of the masses has led, I am persuaded, to a proportionate increase in the amount of drinking amongst them. This I have had many opportunities of observing, and especially at Warrington—which may be taken as a very fair type of an average provincial town—where day after day, for nearly two years, I mixed freely with the masses[1]. It was quite a remarkable event when I came across what could be really called a "steady man," and a comparatively rare one, a steady woman. Much the same may be observed among the masses in the Metropolis though not perhaps to quite the same extent. The conditions now compare unfavourably with those of former times, when these same people had more limited means and less opportunity to drink. The great extension of "piece-work" distributes the same amount of work among a larger number of hands; so that few men work more than five days, or forty-six hours a week, and spend the remainder in the public house. Now, the effects of alcoholism on the nervous system of the individual are well known, but the effects upon the progeny are not sufficiently realised. Again and again have you had the opportunity here of seeing these effects. You know that there is no more potent cause of that inherent weakness of the nervous system, which constitutes a predisposition to neurasthenia and other nerve diseases in an individual, than alcoholism in one or both parents. We have seen it many times where the family history was absolutely free from any kind of neurotic taint whatsoever. This I believe to be the principal reason why neurasthenia has increased so much among the masses of the population.

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[1] Having been deputed by the Royal Commission on Vaccination to investigate the small-pox epidemic, 1892-3, in that town.

TREATMENT OF NEURASTHENIA.

In a former lecture (Lecture II.) I referred in general terms to the treatment of neurasthenia, but having now considered the pathology, we are able to approach the subject more rationally and in detail. The very names of the four groups alone supply us with certain indications as to treatment. At the outset let us warn our patients not to expect sudden and miraculous cures. The malady, in most cases, is eminently curable, but nothing can be done excepting by a systematic course of treatment, which sometimes extends to several months. I often think of the remark made by the King of Israel upon receiving the letter from the King of Syria concerning Naaman, when a patient comes and asks in a simple way for "some strengthening medicine to relieve his nervousness."

Our methods must differ somewhat in the four pathological groups of cases just referred to, and before deciding on a plan of action we must identify which it belongs to; and if possible, whether there be any true gastric disorder.

We will commence with the first, and in this clinique the most common group, toxic neurasthenia. Here the indications are to relieve the dyspepsia and constipation, to lessen the irritability of the nervous system, and to improve its nutrition.

In order to relieve the indigestion, there are of course many means at our disposal. The diet should be carefully enquired into and a written dietary adhered to. The teeth very frequently require attention, and there are many other points which it would be out of place to discuss here. The bromides may relieve the symptoms for a time, but the reason they so signally fail in some cases—as in the case of Mrs. X., whom I have mentioned to you—is due I believe almost entirely, to the omission to investigate the true source of the mischief. Sometimes it is the alimentary system, sometimes it is the emunctories, which need attention, each by appropriate (and sometimes opposite) measures. A very thorough examination is therefore an indispensable preliminary procedure.

To illustrate my remarks, I spoke, when dealing with toxic neurasthenia, of gastric disorder; but this variety may arise equally well from hepatic and renal disorder, or from some general dyscrasia. Galvanism of the cervical sympathetic and along the course of the pneumo-gastrics I have found very useful in some forms of dyspeptic neurasthenia, harmful in others, but I am unable to draw any general rules in this matter.

The constipation, which also exists in a very large number of cases, must never be neglected. It very often gives the physician a great deal of trouble, especially in women, in whom perhaps uterine retroversion also exists. For hospital patients I frequently order mist. mag. carb. cum mag. sulph., two or three times a day; or one dose early each morning. For private patients, I find an aloin tabloid, administered daily with dinner, useful.

In cases of very obstinate constipation, the bowel must be washed out daily by means of a douche-can. Several pints of water, to which a little boric acid has been added, should be slowly introduced, the patient lying in the dorsal position, with the hips raised. I have also found the administration of a tablespoonful of olive oil with each meal useful, and if the difficulty still persists, an enema of freshly made soap rarely fails.[1]

With these procedures we must combine measures to allay the irritation of the nervous system. This may be done to some extent by means of the bromides, which in some cases I have found most useful; and the bromide of ammonium seems less depressing than those of potash or soda. But the leading indication is to provide rest. This is not always procurable in patients who come to us in the out-patient department, but I have had excellent results, even among these, from a descending galvanic current applied to the spine. It ought to be administered daily, but every other day sometimes does good. You will remember a severe case which I brought before you in my first lecture on this subject. He was a male cook, A. H., aged 28, who had suffered from nervousness, headache, prostration, restlessness, attacks of shivering and other more alarming symptoms for several years. He improved considerably up to a certain point, but after a course of treatment extending over three months he came to a standstill. He was then ordered descending spinal galvanism three times a week. At once the effect was obvious, and after a course of three months' electrical treatment he wrote me a letter (August, 1898) full of gratitude, adding, "I found that the electrical treatment did me much good. I now feel so much better that I should certainly like to see how I get on without any treatment." In view of the severity and long duration of the symptoms for which he had suffered before coming under treatment, this may be regarded as a most satisfactory result. You will remember that this man had delusions and hallucinations of some gravity, and in my belief he has been saved from an attack of insanity. But I remember a somewhat similar case in which galvanism only seemed to irritate the nervous system, so you will see how hard it is to deduce general rules. This variable disease seems more variable as regards treatment than in any other respect.

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[1] Mix 2 tablespoonfuls of sodæ bicarb. with 2 tablespoonfuls of olive oil, adding just sufficient warm water to dissolve it. Then add 1 pint of hot water, and inject slowly into the rectum with the patient on the back.

That neurasthenia may arise when the digestive organs, the liver, kidneys, and other organs, are in perfect health, is a fact which is frequently impressed upon me in private practice, and it was illustrated by several of the cases you have seen. In simple cases of this kind the two chief indications are rest in its widest sense, and the improvement of the nutrition of the body in general, and the nervous system in particular. Now both of these indications are sometimes fulfilled by what is called the Weir-Mitchell treatment for hysteria, that is to say, isolation, over-feeding, massage, and rest in bed. But in neurasthenia isolation is not called for as it is in cases of hysteria, provided only the patient ceases from the conduct of his business. Indeed a little cheerful society is good in the former disease—

anything like strict isolation fosters the tendency to melancholy. On the other hand, over-feeding, massage, and rest in bed are of value in uncomplicated cases. I could mention several severe cases where this treatment has been successful after other measures had failed. But it is not always possible to apply this treatment, nor is it always necessary to proceed to these extreme measures.

Whenever the patient is awake, some part of his nervous system is always in action, but we have in sleep the most perfect form of rest to the nervous system possible, and one of our first cares should be to relieve the insomnia which is so frequently present. One is justified in these cases, to some extent, in the use of the hypnotics which you will find enumerated in works on therapeutics, to tide over the difficulties of the moment, with due care, and provided they be combined with other measures directed to the removal of the cause. Ten or twenty grains of bromide three times a day, or even less, is useful, not only for relieving the restlessness by day, but also for procuring calm and natural sleep at night. Very different doses of this drug are successful in different cases. As little as 7 grs. thrice daily is often sufficient. I have very rarely seen any ill effects arise from even the most prolonged use of this drug, using very largely, as I do, the ammonium salt. While taking it many patients complain their memory is defective and their minds may be a little confused at times, but this always passes off immediately on the cessation of the drug. But I have often found that still simpler measures will procure sleep, such for instance as a glass of "toddy" the last thing at night, or warm milk and water containing 20 grs. of hypophosphite of soda. Among my private patients I stipulate that they shall spend twelve hours in bed, taking their breakfast before rising.

You will perhaps pardon my entering into what may appear to you such trivial details, but I am persuaded that success in the cure of disease often depends on attention to minutiæ such as these. I well remember a lady, aged 53, a professor's wife, who consulted me in 1896 for melancholic vigilism, that is wakefulness at night attended by imaginary fears, accompanied by attacks of prostration, of sighing, and other obscure neurasthenic symptoms. I treated her upon the lines I have described for some time, but her improvement dated from the day when she commenced hypophosphite of soda in warm milk at night, and partook of her breakfast in bed each morning. She herself attributed her recovery to the latter for, she said, "it relieves me of the bustle and rush of the morning."

Descending spinal galvanism and hypnotism are means on which one can also rely to allay the irritability of the nervous system. I have already referred to the former. General faradisation of the limbs and static electricity are invaluable remedies to promote the tone of the muscles. Great results have been claimed for the d'Arsonval method of applying the high frequency current.

Hypnotism can only be of service in uncomplicated cases, under certain conditions, as an adjunct to other treatment. I have known it successful in cases due to shock, grief, and anxiety. It may be useful in procuring sleep, or the calm which closely resembles it; but post-hypnotic suggestion is not so useful here as in the case of hysteria. Nerve tonics are useful adjuvants when the primæ viæ are in good order. Among the most useful of these I have found a mixture of damiana and phosphorus. Nux vomica is most suitable in the neurasthenia of the aged; it sometimes produces twitchings of the limbs in young and middle aged people.

In cases where irritability of the nervous system is present, I have found nothing more useful than a series of warm baths, and particularly in the form of the Turkish bath taken leisurely, and allowing a full hour for rest in the cooling room. For these cases cold douches should be avoided. But on the other hand, where spinal weakness is a feature, cold douches to the spine are useful. I remember a male case which was accompanied by impotence, derived considerable benefit in this way. In either case, whether hot or cold baths are employed, a course of several weeks is necessary. No improvement must be expected with the first few baths.

The question of exercise—walking, riding or bicycling—is one of some importance, and one in which you must be guided by circumstances, and also largely by the inclinations of the patient himself. In general terms, gentle muscular exercise is liked by, and is beneficial to patients suffering from cerebral neurasthenia; whereas in spinal neurasthenia it is generally found fatiguing and harmful, and in these, rest or passive movements only are permissible. We must therefore ascertain which predominate, the cerebral or the spinal symptoms.

A sea voyage, if the patient can afford to do it in comfort and free from anxiety, is specially indicated in cases due to mental strain and overwork. It is impossible to undertake any serious brain work on board ship, and the freedom from the hourly postman's knock is in itself a therapeutic agent of some value.

Finally, gentlemen, we have in the soothing influence of the pipe a preventive measure of whose value I am fully persuaded. More than one over-worked doctor have I rescued from impending neurasthenia by inducing them—with the full support and concurrence of their wives—to take, albeit late in life, to that oft-times abused, and sometimes over-used, fragrant weed.

The symptomatic indications in this disease are endless, but there are one or two which may briefly be referred to. Many of the vaso-motor attacks, flushing, pallor, shivering, giddiness, a feeling as though they were going to faint, &c., may be relieved by a draught of sp. ammon. aromat. ♏ 15, tr. digit. ♏ 5, aq. chlorof. ℥ i.; and in three cases in which I have used the trinitrin tabloids (gr. $\frac{1}{100}$), given when the attack was impending, it has warded it off. A patient of mine aged 40, has carried some of these tabloids in her pocket habitually for two years, and has thus successfully avoided the syncopal and other attacks for which she originally consulted me, by occasionally taking one, when she felt an attack coming on. The "sinking feeling in the stomach," and—strange as it may seem—the feeling "as of sinking through the bed," may be sometimes relieved by wearing an abdominal belt or flannel roller round the belly. It is a good plan to examine the abdomen in all cases of neurasthenia, for as Glénard has pointed out it may be associated with floating kidney or other displacement of the viscera; though I cannot go the length he does of attributing the disease in all cases to a hypothetical dislocation of the abdominal viscera, which he calls enteroptosis.

Gentlemen, you will perhaps pardon me for reminding you of my concluding remarks the last time we met, which might more appropriately have been postponed to the present occasion. It is our bounden duty, on the one hand, to fit ourselves to cope with all kinds of ailment, however trivial; and on the other to resolutely set ourselves against charlatanism in every form. It is a war of truth against falsehood; and "a lie cannot live."

LECTURE V.

ON THE MENTAL SYMPTOMS OF NEURASTHENIA; AND NEURASTHENIC INSANITY.

SUMMARY:—*Frequency of mental symptoms in neurasthenia.—Illustrative cases of Cerebro-Spinal Neurasthenia, Cerebral Neurasthenia and Neurasthenic Insanity.—A classification of disorders of the mind attempted.—Mental symptoms met with in neurasthenia.—Three grades.—How neurasthenic insanity differs from true insanity.—Prognosis of mental disorders in neurasthenia.—Treatment.—Dangers of asylum treatment.—Legal processes.*

GENTLEMEN,—Neurasthenia is but the first step to madness in a certain number of cases. This is especially true where there is an hereditary taint of insanity; in which circumstances the prognosis as regards the mind is always grave. The mental disorder in such cases differs in no way from the various forms of true insanity described by alienists.

But, without going on to the chronic insanity met with in asylums, cases of neurasthenia may also present mental symptoms of a very serious kind. Casual observers would be apt to describe this as ordinary insanity; and it might certainly form the basis of certification in lunacy. These cases nevertheless present certain differences from true insanity which I hope to lay before you. The bodily weakness and other symptoms of neurasthenia are present, at any rate at first; but these are overshadowed by the mental attributes of the case. This group of cases may, I think, be called *neurasthenic insanity*.

In another, less serious, group, which may appropriately be described as *cerebral neurasthenia*, the mental symptoms are pronounced, but are more or less evanescent or transient. Physical disability is generally present, but we are not consulted on account of this, which is a subordinate feature; and the spinal symptoms are absent or relatively unimportant.

Finally, there is the large group of cases, such as those we have hitherto studied together, who complain of both mental and physical weakness, in about equal proportions. These constitute the variety we already know as *cerebro-spinal neurasthenia.*

In point of fact, gentlemen, the mind is very rarely free from some kind of disorder in this disease, and pure "Spinal Neurasthenia" is not common. But for the purpose of our studies to-day, and for practical purposes generally, cases of neurasthenia in which mental symptoms are present may, I believe, be grouped under the four headings I have just referred to, namely, neurasthenia complicated with some form of true insanity, neurasthenic insanity, cerebral neurasthenia, and the cerebro-spinal, or commonest variety of the malady, attended by mental symptoms. We will consider these various groups this afternoon in order of increasing severity, *i.e.*, the inverse of the order in which I have just mentioned them.

After showing you, or quoting, cases, and mentioning the circumstances under which these varieties may arise, I want to bring to your notice an attempt I have made to classify the different disorders of the mind, both trivial and severe. This will I hope enable us the better to undertake the principal task of to-day, namely, the differentiation between Cerebral neurasthenia, Neurasthenic Insanity and true Insanity; because practical questions, relating to prognosis and treatment, differ very widely in these three conditions.

I.—We will commence with CEREBRO-SPINAL NEURASTHENIA. Some of the most important symptoms of this, the commonest form of the disease, are referable, as you will remember,[1] to the mind. Indeed, it is not infrequently on account of the inability to "collect their thoughts" or to "remember names of things," that such patients consult us. Some of these symptoms are sufficiently grave. You will remember, for example, the young man who was troubled every now and then with an impulse to murder his own child; and another who felt he "must jump out of the window." These mental symptoms are generally of the sombre type which is usually in marked contrast with the gaiety of hysteria. The tendency is almost without exception towards melancholy; the intermittent joyousness of hysteria is altogether wanting.

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[1] Lecture II. (ante.)

I am able to show you a typical illustration of this kind, in the person of Wm. B——, aged 36, who is employed as a labourer in the Bessemer Steel furnace, at Woolwich. He works the "blast" which has a pressure of 28 lbs. to the square inch, and he attributes his illness to the "vapours" which come from the furnace. There is no insanity or other noteworthy fact in his family history; and his previous history is healthy excepting that he has suffered from "severe indigestion on and off for five or six years," due it seems to his extremely bad teeth. The "nervousness" has been coming on for the last two or three years, but has been much worse since he was startled a few weeks back. He complains of a "tight pressure on the top of his head," that he "feels as though something dreadful were going to happen" though he does not know what, and "cannot do his work for the feeling"; that he "can't remember things," that he "dare not ride in a tram-car, for fear something is going to happen," that he "gets all of a tremble and bursts out crying" and has "a great temptation to jump into the canal." He feels "pretty fair" as long as it is bright and the sun is shining, but as soon as it rains, and in the dusk of the evening "I feel something awful." For the last few weeks he has suffered from "wandering" (talking and walking), in his sleep, which has been troubled by horrible dreams; sometimes he is very sleepless. The viscera are normal excepting for the dyspepsia above mentioned, from which he still suffers. Secondly, the pupils are widely dilated; and thirdly, the patellar reflexes are + 1, (+ 3 being the maximum increase) on both sides.

CASE XVIII.

This is a fairly typical case of cerebro-spinal neurasthenia. The mental are more prominent than the bodily symptoms, but a general review of the case reveals the fact that it is as much a question of bodily as of mental weakness and hypersensitiveness. Some years ago this case would have been classed as "hysteria" or vaguely called "functional," a synonym in those days for hysterical. Attention would have been drawn to the remarkable fact of the disease occurring in a sturdy labouring man. But these cases are of every day occurrence now, and this extreme morbid timidity is an ordinary feature of the disease. I could show you many cases of a like kind on any of my out-patient days; and you have seen several at our previous meetings when we discussed this type of neurasthenia, and the circumstances under which it arose.

CASE XIX.

II.—The next case is one of CEREBRAL NEURASTHENIA; and it illustrates very well the truth of the statement that one half of the world does not know how the other half lives. The other day, one of my out-patients, after having been in to see me as usual, came back to the hospital in great alarm about her cousin, a young girl who had come with her simply as companion, and who seemed to have suddenly gone "wrong in her head." Her name was Gladys F——, and she was a tall spare unhealthy looking child of 14 years of age. Certainly her wild terrified look and wandering gaze, were well calculated to alarm her companion. She talked at random, hardly knew where she was, and her manner was very strange.

I learned that she had been "out of health" for a few weeks, complaining that she could not remember things, and lately had seemed a little "curious in her manner," but nothing more. She had been sleeping badly and dreaming much, sometimes restless at night, and somewhat listless by day. But none of these symptoms had seemed important enough to consult a doctor; nor, had she been brought to the hospital for these, she had simply come as companion to her cousin. The catamenia had appeared, for the first time, the day before I saw her. I prescribed full doses of bromide with plenty of milk, and of other food, and twelve hours of sleep per diem. The following week she was better; and her mother, who came with her this time, informed me that for six or eight months she had been gradually getting listless, feeble, nervous, and easily tired. Lately she had begun to go about with her tongue hanging out of her mouth, and was otherwise "curious in her manner," "inventing things" *i.e.*, romancing—a frequent sign of incipient mental disorder in childhood—and, as a consequence of the unhappy life they had been living, she had been steadily losing flesh and strength all this time. The family history was without taint of insanity, nerve disease, or phthisis.

This child was one of a family of seven brothers and sisters. The father was a pensioner on £60 a year, nearly the whole of which sum he had spent in drink during no less a period than the past seventeen years. Moreover, he frequently pawned the furniture, and the only clothes which the children possessed, for drink. These children therefore had to stop indoors, with the blinds down; and not infrequently they had to sleep naked on the floor. Our patient being the eldest, had often given up her scanty meal to the little ones. Deprived, therefore, of clothes, food, light and air, is it any wonder that this poor child should develope mental derangement?

I use the phrase mental derangement advisedly, for her mental symptoms did not correspond definitely to any recognised form of insanity. She had no definite delusions, no maniacal violence, no melancholia, and the condition could not be called dementia. But the case very properly comes under the denomination *cerebral neurasthenia*. The asthenic condition has fallen most heavily on the brain. Her general condition was one of extreme debility, but none of her bodily symptoms were of a pronounced kind. Her mental symptoms, on the other hand, consisted of extreme loss of memory, and loss of attention so great that she was unable to finish a sentence. The will-power was in abeyance, and the emotions uncontrolled, for she was occasionally in floods of tears. But, all the symptoms were unstable and changing in the highest degree; and the affection was transient and curable. She has made a speedy recovery in the course of two weeks under the good living, and in the happy home, of the friends with whom she is now staying.

The circumstances under which this form of mental derangement, cerebral neurasthenia, arose in this case were very typical. In the first place you will observe that there was no family history of insanity. Sometimes, in such cases, one or both parents are phthisical and die young. But here we have yet another illustration of the potency of alcoholism in the parent to damage the nervous system of the offspring, a point on which I am never tired of insisting. In the second place, the father's drunken habits had also brought into operation another potent predisposing factor in the starvation and the extremely unhealthy life which this unfortunate child was compelled to live. Finally, the somewhat sudden appearance of the menses acted as the determining cause of the attack, the advent of which we had such a unique opportunity of observing.

CASE XX.

III.—One of the worst cases I have ever met with, of the condition I wish to include under the term NEURASTHENIC INSANITY, was in a gentleman whom we will call Mr. T., 65 years of age, who came under my care in August, 1896. He came of an intellectual but eccentric family, and had himself been somewhat "peculiar" all his life, though full of energy, and very successful in his profession. His peculiarity took the form of extreme self-will or obstinacy, and tenacity of purpose; together with a certain "radical" tendency which must always be reforming somebody or something. You will see shortly why I lay stress on these points. Several of his relatives had had attacks similar to the one I am about to describe. I have studied the history of this family, a large and prolific one, very carefully, and there are three features which struck me particularly:—(1) They could nearly all of them be described as eccentric, peculiar, or of a nervous temperament, though they were all (with only one exception) of a high order of intellect, and successful in life. (2) Several of them had had attacks of what might undoubtedly be called insanity, but the symptoms were of such a nondescript kind that they could not be classed either as mania, melancholia, dementia, or any other definite form known to alienists. (3) Although these attacks were, in some instances, very severe, they all passed off after a few weeks or a few months, and the patients returned to their avocations in life, without it having been necessary to place any one of them in an asylum.

These are some of the features which appear to me to distinguish the mental derangement of neurasthenia from those of true insanity, namely, its nondescript character and its curability under measures directed to the physical condition. Now, since these facts are not, I believe, sufficiently recognised, and as this case presents other features of interest besides his remarkable recovery at the age of 65, I think it is worth while to study it in some detail.

Full of the energy which declines to receive assistance in detail work, with a large and successful *clientèle* to manage, and parliamentary duties to discharge, this gentleman lived a very busy life. He suffered from unmistakeable symptoms (which I learned from a physician who saw him then) of arterial thickening as early as the age of 43, more than twenty years before he came under my care, and from time to time thereafter. He is said to have had a slight attack of "depression" after his first marriage in 1863, and also after his second in 1870. With these exceptions, and an occasional gastric upset, he kept well until December, 1890—an interval, be it observed, of twenty years. The attacks just named appear to suggest strong sexual passions, a tendency which was also revealed later on. In December, 1890, he had his first "nervous break-down," due, it was thought, to overwork. His symptoms were great bodily weakness followed by depression, despondency, irritability, loss of memory, and a lack of power of Attention, accompanied by some confusion of thought. After a few months he recovered. The next winter (1891) he had a similar attack, and also in January, 1893, February, 1894, and March, 1895. Each time the attack was preceded by physical weakness; it lasted only a few months, and disappeared with rest and travel or country air.

In 1891 some moral obliquity appeared, for, although a man of the highest moral rectitude, he began to mix with women, possibly because his marital relations were disturbed by the practice of withdrawal. In August, 1892, he contracted syphilis, but was thoroughly treated for two years, and he never had any symptoms of consequence referable to this malady, either at the time or subsequently.

Gentlemen, I will ask you, in passing, to notice the time of year at which this patient suffered from mental disturbance, namely, in the winter and early spring. Now, there is no doubt that his arteries had been for a long time the seat of what I have described elsewhere as arterial hypermyotrophy;[1] and in this disease the vaso-motor regulation is considerably disturbed, consequently heat production and loss, and tissue change, were considerably deranged. I venture to think that the lowered vitality, consequent on the undue loss of heat and the other disturbances of vaso-motor regulation on which nutrition so much depends, was the principal cause of these attacks. In favour of this view it may be mentioned that during the three autumn months when he was under observation in 1896 his temperature was always extremely low, varying between 95° and 97° F.

The attack I am about to describe commenced in the spring of 1896 (about March), when he complained of feeling weak, tired, and listless. In April he became depressed, and complained of "confusion of thought," an "inability to collect his thoughts"; loss of memory and power of attention, again accompanied by considerable prostration. He suffered also greatly from disturbed and insufficient sleep. Massage, which had done him good in previous attacks, was tried with the effect only of making him worse; and it was decided in June, 1896, that he should go away with a medical companion. However, he gradually became more and more abstracted, silent, almost morose, and haunted by an extreme dread lest anyone should know of his ailments, especially syphilis, and of the previous moral obliquities which I mentioned to you. He avoided persons whom he met and particularly his old friends and his relatives.

During July he became slowly but steadily worse. It was about this time that he first began to speak in a whisper, a symptom which remained until the end of October, but his suspicions and delusions did not remain long.

In the beginning of August he was placed, with his medical companion, in apartments, in a quiet country village, and it was at this time that I first saw him; my note of his case being as follows:—"Much upset by my visit, as he did not understand 'the purport of it.' His aspect was furtive and fearful, and he was full of remorse, fear, and suspicion, spoke in a whisper all the time, continuously repeating 'it is no good,' 'it is no good.' He was hopeless of ever getting better, or of retrieving the past. He believed that he had eternally disgraced himself by consorting with women: said there 'are other and more dreadful things,' but when pressed to name them could not do so. He thought someone was watching us from the window. Physically, the arteries were considerably thickened, not apparently with atheroma, but with uniform sclerosis. Heart somewhat dilated with a systolic ventricular murmur of dilatation (which subsequently disappeared). Arterial tension very markedly high (to which there was a tendency throughout the illness). Lungs slightly emphysematous; liver dulness somewhat contracted; bowels with a great tendency to constipation; appetite good, almost ravenous."

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[1] *British Medical Journal*, March, 1897.

Soon after this, the ravenous feeding produced a very severe gastric upset, and with this the bowels became very obstinate, the tension very high, and muscular rigidity and tremor supervened. He had to be dressed and undressed like a child, and not infrequently passed both urine and fæces either in bed or in his clothes; taking a childish delight in the trouble caused on these occasions. The temperature throughout was subnormal. He talked quite rationally about committing suicide once or twice, but never made any real attempt.

During September he had three more attacks of gastric disturbance, each time being attended by very high arterial tension, muscular rigidity, and tremor. On each of these occasions he became violently resistive. He would do nothing that he was asked, and opposed with active violence everything that was done for him, so that it became a stand-up fight to dress or undress him, and it was often very difficult to keep him in bed at night. During the day he would stand for hours together at the gate, and unless some one were there to prevent, he would go out and wander.

His condition at these times was one of violent resistance to everything and everybody, and as soon as anyone approached him he would put up his hand to keep them away.

It is worthy of note that throughout his life, in spite of many excellent qualities and kindness of heart, he seemed to find pleasure in taking the "opposite view" to everyone he met. He was one of those people, and the English race produces quite a number, who carry independence to an extreme, and always seem to be playing the part of the "opposition." Combined with this was a remarkable strength of will, which had always characterised his actions. A knowledge of these two points afforded a key to the leading mental symptoms in this case, which consisted not of an alteration of character, but simply an exaggeration of certain of its normal constituents, while others became diminished or lost.

During September, the gastro-intestinal disturbance, due chiefly to the ravenous eating and bolting of food, seemed to be the main element in the case, for all the other symptoms were bad in proportion to the severity of the alimentary derangement. During one of these exacerbations matters assumed a very serious aspect. The tongue was dry, brown, and cracked, the teeth loaded with sordes. His violence, if he was touched or approached, was extreme. His perverseness was so great that he would neither stay in bed nor get up, and it was necessary for two attendants to remain with him continuously. The temperature on this, the only occasion, was elevated, varying between 100° and 100·5° in the evening for a week or ten days. The bowels were either obstinately constipated or in a condition of diarrhœa (? in consequence of medicine). In proportion as the alimentary disturbance was severe, the arterial tension became high, the muscular rigidity marked, and the violent resistance and other mental symptoms more pronounced. This attack lasted six or seven days, and towards the end was accompanied by so much weakness that it was a question whether he would not die of asthenia.

Between these attacks the mind seemed to be a blank. The suspicions and delusions had passed away. He hardly ever spoke even when addressed, though he seemed to recognise some people. Left alone, he would remain in one position for hours at a time; spoken to or approached, he put up his hand to resist. This condition was interrupted every few days with a glimmer of returning intelligence, in which he would ask a few simple questions like one awakening out of sleep.

On September 24 the following note was made: "During the day the patient was quiet, and the expression more intelligent, though he looked older and more haggard. The muscular rigidity had passed away, and the tension was fairly low. In the evening, shortly after dinner, a sudden change came over the face—an expression of ferocity—and the muscular rigidity speedily returned. Refused to allow anyone to feel his pulse, refused to go to bed, was undressed by force, and struggled violently in bed to get out. When allowed to do so, went to the door and struggled violently with it, although he knew it was locked, until the perspiration streamed down him. Asked why he did this, the question being repeated several times, he at last said, in a whisper, 'Because I have got all those things to see to.' This violence and muscular rigidity remained until 3 or 4 o'clock in the morning, when he got about two hours' sleep. At 8 o'clock he was more manageable, the tongue was still covered with a thick white fur; muscular rigidity still very marked." He had several similar, though less severe, attacks, and they always started after a meal.

During all these months it was hard to find a name descriptive of the condition. One eminent alienist who saw the case, declared he was quite unable to give a name to the condition, but when pressed to do so, suggested that it somewhat resembled "stuporose melancholia"; another had similar difficulty and then suggested "subacute dementia." The last of the resistive attacks above referred to occurred at the end of September, and from this time he made gradual improvement, both in body and mind.

During October, on milk diet, the tongue cleaned, and the bowels became more regular. The muscular rigidity was present at first each morning only, and then gradually disappeared, though it was still apt to reappear whenever there was any gastric disturbance. The heart also gradually improved (less dilatation and irregularity), and the arterial tension became less. He still passed his evacuations involuntarily up to the end of October. During October the temperature varied between 95° and 97°; and when weighed in the last week of this month he was found to be one stone below par, and correspondingly thinner. As regards his mind, the delusions and suspicions did not return. He became docile, but very childish and simple, frequently asking childish questions. He took no interest in things around him for a considerable while, and sat for hours together with a book in front of him. He understood nothing that he seemed to be reading, and very little of what was said to him. His mental condition, however, varied considerably from day to day, and he was much brighter on some days when, be it noted, the arterial tension was low.

In November he first began to understand things, and voluntarily to pay attention to the calls of nature. He was still very silent, and spoke in whispers, but he began to take some interest in his immediate surroundings, and to read the newspapers, though, as a rule, not comprehending much.

Later on, the weight gradually improved; the intervals of intelligence became longer; and the different faculties of the mind one by one gradually returned. He recognised and conversed with his friends and relations, who had purposely been kept away ever since August 1. It is worth noting that on the occasion of their visits he could by an effort of will appear more rational—giving them an exaggerated idea of his improvement—but, after these visits he was always worse, his mind becoming more blank and his memory and power of attention less than before these interviews.

From January onwards he made slow but steady progress towards recovery. In the spring he was able to return to his relatives, and after a sea voyage of three months, resumed his control of affairs at his office as though nothing had happened.

Looking back upon the illness of this patient, which extended over a period of nearly twelve months, it seemed to me that it could be divided into five stages.

Stage I. (March to May) consisted of a period of gradually increasing bodily weakness, with loss of memory, nervous depression and confusion of thought, with gradual loss of the faculty of Attention, and consequently of the capacity for transacting business, terminating in a complete inability to write the simplest letter.

Stage II. (June and July) consisted of a period which might almost be described as melancholia, characterised by morbid (though not groundless) dreads, remorse, and suspicion; going on to transient delusions of persecutions which, however, varied considerably, both in kind and degree, from day to day, and formed only a temporary and subordinate feature of the case.

Stage III. (August, September and October). The delusions, suspicions and remorse passed away, and the mind became a blank, the course being broken by occasional lucid intervals. In this stage the leading features of the patient's character, "opposition" and "self-will," which had previously been coming to the fore, now became the dominant symptoms of the case. These were manifested in a series of attacks initiated by gastro-intestinal disturbance.

In Stage IV. (October and November), the mental condition was one of amentia, in which the patient was very childish. This was interrupted by gradually increasing intervals of intelligence.

Stage V. (November onwards). This, the final stage, consisted of gradual recovery, the different mental faculties becoming slowly restored.

The most note-worthy features of this case appear to me to be three in number.

1st.—The definite association of bodily ailment with the mental disorder. There was marked physical weakness throughout the case. In the first part of the case bodily and mental weakness moved *pari passu*. In the second part, the signs of irritability of the nervous system and violent resistance were associated with, and directly proportionate to, the gastric disorder. In the third, or concluding part of the case, the mind recovered as the body got stronger.

2ndly.—The leading feature of the psychical condition was mental weakness. From time to time, active perversion of the mind appeared to be coming on, but this was always transient, and the condition again relapsed into one of amentia. The event which we feared most all along, and which at one time seemed imminent, was chronic dementia.

3rdly.—The most troublesome of the mental symptoms, and the only ones besides the amentia just named, consisted of an extreme exaggeration of the two mental attributes normal to the patient in health, viz., his self-will and opposition to others. These had doubtless become emphasised owing to the absence of the habitual control from the weakness of his mind. His delusions were not fixed, and were not wholly unreasonable.

The treatment adopted varied at different stages. The first, and most essential point was his complete isolation from his friends, and from the conditions under which the disorder arose. It was deemed advisable that he should never be left alone, but certification and removal to an asylum were never seriously entertained; and though he talked (rationally enough) of suicide he never made any real attempt in that direction. Had it not been for the extreme perverseness of his character, and the occasional violence which arose out of this, one person could have managed him all the while, day and night.

As to the value of drugs in this case there can be no question, and no one who watched the case from day to day could doubt that the possibility of his developing acute mania on the one hand, or drifting into chronic dementia on the other, was averted by these means.

The treatment employed necessarily varied at different times. In the first stage it was probably directed towards procuring mental rest and sleep; and it is worthy of note that massage and "rubbing" which appears to have been tried without adequate medical supervision, only had the effect of making him worse. In the second stage, bromides were most useful, which, combined with a moderate amount of alcohol (4 or 5 ounces a day), procured rest and sleep, after which he always seemed better. In the third stage, which seemed obviously dependent upon the alimentary disturbance, and the consequent high tension, gastro-intestinal remedies, such as bismuth and milk diet, were clearly indicated combined with bromides to allay the neuro-muscular irritability. In the fourth stage it was obviously necessary to promote the nutrition both of mind and body. This was effected by careful but liberal feeding, phosphorus, strychnine, cerebrin, damiana, didymin, and the hypophosphites, combined with pepsine at meals, and careful regulation of the bowels. As he was recovering gentle massage, under medical supervision, undoubtedly expedited matters considerably.

Gentlemen, did time but permit, I could narrate to you several instances of the same kind, of varying degrees of severity.

IV.—TRUE INSANITY. It is not possible, even if time permitted, for me to give you examples of all the many and varied forms in which true insanity may be met with. These can only be seen in the various County Asylums, or better still, in the lunatic wards of the large Metropolitan Workhouses and Infirmaries.

It is a matter which I never cease to regret that the lunatic wards of the Workhouses are not rendered available for teaching and research. It is here alone that the subject of mental disorders can be studied in all its completeness. It is here alone where we can study many of the slighter cases; and many of the earlier phases of true insanity, imbecility, and idiocy, which very often do not go to an asylum at all. These either stay in the Workhouse or the Infirmary, or go back to their friends. It is becoming more and more the fashion among quite respectable and even well-to-do classes of the community for the purpose of certifying a mental patient to pass them through a workhouse. In this way a field for clinical teaching and research is growing larger and more varied day by day; a field which would be of the greatest value to science, for purposes both of instruction and research; and which, if rendered available, would benefit the profession, the patients, and the public generally.

It must suffice on the present occasion to state that by true insanity I mean a definite aberration of the mind coming under one of the great groups Mania, Melancholia, Dementia, or General Paralysis of the Insane, in which there are not necessarily any symptoms referable to the body, excepting in the last-named, in which the bodily symptoms are of a definite kind differing considerably from those which characterise neurasthenia.

Having now presented to you examples of the various ways in which mental derangement may be associated with neurasthenia, we are in a position to review the whole subject. With this object in view I propose to draw your attention to this table of the classification of mental disorders of all kinds. It is a difficult subject, and this table is doubtless full of imperfections, but it is based on experience and has aided me for some years in the diagnosis of different mental affections.

TABLE III.—CLASSIFICATION OF MENTAL DISORDERS.

Taking mental disorders as a whole, cases may, I believe, generally be included in one or other of three great groups: —A—Deficiency or excess of one or more (not all) of the faculties of the mind; B—Deficiency of the mental faculties as a whole (imbecility); C—Active perversions of the mind (insanity proper). Each of these groups contains several subdivisions.

A. DEFICIENCY OR EXCESS OF ONE OR MORE (NOT ALL) OF THE MENTAL FACULTIES.—The relative preponderance of one or other faculty constitutes the "type of mind," or "character." An abnormal deficiency or excess of one or other of the faculties is met with in neurasthenia and mental weakness from any cause; in the beginnings of insanity, and in "borderland" cases. The following are the principal defects which cases coming in this group may present.

I. Deficient *Memory* (amnesia), which may be Complete, or Partial:—

(*a*) Complete amnesia may be met with, for example, in five conditions:—

(1) Senile amnesia.
(2) Chronic alcoholism.
(3) Neurasthenia.
(4) Dual memory (*i.e.*, dual consciousness).
(5) Incipient insanity.

(*b*) Forms of partial loss of memory may be met with in five varieties:—

(1) Agraphia (loss of the mental motor image of writing).
(2) Aphemia (loss of the mental motor image of speech).
(3) Word-deafness (loss of the commemorative auditive image).
(4) Word-blindness (loss of the commemorative visual image).
(5) Mixed forms of the foregoing.

II.—Deficiency or excess of *Attention.*

(1) Excessive Attention is met with as a normal feature in "strength of mind." It also constitutes the leading element in "fixed idea" (monoïdeism), ecstasy, and hypochondriasis.
(2) Deficient Attention is met with in neurasthenia and mental exhaustion of all kinds, and in the beginning of many forms of mental disorder.

III.—Deficiency or excess of *Will-Power.*

(1) Excessive will-power is seen normally in "strength of mind" and "obstinacy."
(2) Deficient will-power is seen in the indecision and loss of control which are met with typically in the hysterical diathesis. It is sometimes a feature of neurasthenia.

IV.—Deficiency or excess of the *Feelings* (more often apparent than real, being due to a want or excess of control, *i.e.*, will-power). This is met with in neurasthenia and incipient insanity.

B. DEFICIENCY OF THE MENTAL FACULTIES AS A WHOLE (imbecility): including delayed mental processes.

I.—Idiocy (*i.e.*, *congenital imbecility*). This is met with in seven different forms.[1]

(1) Simple congenital idiocy.
(2) Micro-cephalic idiocy.
(3) Hydrocephalic idiocy.
(4) Scapho-cephalic idiocy.
(5) Paralytic idiocy.
(6) Sporadic cretinism.
(7) Endemic cretinism.

II.—Mental aberration *arising in childhood.* Seven causes.

(1) After infantile convulsions.
(2) After epilepsy.
(3) After cerebral lesions (accompanied by paralysis).
(4) Of inflammatory origin (? meningeal).
(5) Hypertrophic cerebritis.
(6) Reflex insanity.
(7) Mania and melancholia of childhood (rare).

III.—Dementia (*i.e.*, *acquired imbecility*) may be :—

(1) Primary (*e.g.*, senile) dementia.
(2) Secondary to some other form of mental disease ; or to Neurasthenia.
(3) Due to gross intracranial lesions (*e.g.*, arterial, meningeal affections, &c.).

C. ACTIVE PERVERSIONS OF THE MIND (INSANITY PROPER). Three great groups.

I.—General paralysis of the insane.
II.—Melancholia (depression and slowness of mental action).
III.—Mania (excitement and rapidity of mental action).

In addition to the foregoing, authors have at different times employed various names, according to the leading feature of the case, or its cause ; thus,—Delusional insanity ; Emotional insanity ; Moral insanity ; Alcoholic, Puerperal, Phthisical, Syphilitic, Epileptic, Visceral, and Toxic insanity.

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[1] This is Dr. Fletcher Beach's classification of the different forms of idiocy.

This table has doubtless many faults, as all classifications of mental disorders must have, one group overlapping another. But it has helped me in my work at the Infirmary where, as I have just remarked, one meets with a wide range of mental disorder, both as regards variety and severity.

Now, Gentlemen, group A, comprises, it will be seen, cases of commencing insanity, borderland cases, and other forms of mental weakness. It even includes two conditions which are sometimes classed as true insanity, namely, monoïdeism and ecstasy. But, the important fact is this, that the mental disorder in neurasthenia—of no matter what variety it may be, Cerebro-spinal, Cerebral, and even Neurasthenic Insanity—belongs very largely to this group, *i.e.*, to the group in which one or two only of the mental faculties is affected. Severe cases of neurasthenia may drift into hypochondriasis (group A) or into dementia (group B)—that was what we feared in the severe case of Mr. T——, but the mental disorders which form part of neurasthenia, rarely or never resemble exactly the mental aberrations described under group C.

Cases as severe as that of Mr. T—— are rare, and in cases of neurasthenia of less severity; in the great majority of all such cases in short, the mental aberration belongs, as I say, to group A. It may sometimes need a little thought and careful inquiry to make this out, but with care you will find that the mental symptoms of the disease can be severally explained by disorder of one or other of the fundamental faculties of the mind mentioned in that group.

Let us analyse this statement a little more closely. In neurasthenia we have two qualities, a weakness, and an irritability of the central nervous system, and the mental symptoms seem to depend chiefly upon the former.

Among the mental symptoms *loss of Memory* is perhaps the commonest. So frequently is amnesia met with, that I gave it, you will remember, among the definite symptoms of the disease (Lecture II.). It may be one of the partial forms (Ib), or it may be a complete form (Ia). On the whole, I think partial forms are more common. For example, a man whose malady dated from his rescue of a burning child four years before, described his mental defect thus: "when I want to say something, it seems as though I could not get the words out; I know the words but I cannot say them." He is suffering, you will observe, from aphemia. I have met with several cases where the visual or auditory memory failed, the other kinds of memory remaining perfect, the patient gradually learning to conceal the defect by the use of the other forms.

Deficient power of concentrating the *Attention* is equally common, and a large number of these patients come because they cannot on this account transact business. Not infrequently they find themselves unable to write a letter. In several instances inability to write letters has been the first serious symptom which induced them to consult a doctor. When deficient power of attention is carried further still, it leads to confusion of thought. This is always a symptom of some gravity, for it indicates extreme mental exhaustion, and patients should come under treatment without delay. Excess of Attention is not met with in neurasthenia, and thus there is no fear of confusing this condition with cases of monoïdeism and ecstasy.

Deficiency of the *Will* is another symptom in neurasthenia, and is manifested chiefly as a want of control. Irritability over trifles is almost as common as defects of memory. Emotional outbursts of laughter and tears are not so common as in hysteria. The absence of gaiety is, in point of fact, a prominent feature in neurasthenia, in which the gloom and depression are usually in marked contrast with the spasmodic gaiety of the hysterical subject.

As a consequence of the *irritability* of the nervous system it responds more readily to (and magnifies, so to speak) all impressions received from the outer world. Thus, in these patients the vibration of a train may have the same effect as the vibration of an earthquake on others, and so we get "train panic." The closeness of a room in this way may produce an extreme sense of oppression, and then we get claustrophobia. On the other hand, an open space seems like an infinity of distance, and thus we get agarophobia. The simplest doubts acting on an irritable nervous system, become indescribable dreads and "terrors," and from these we insensibly pass to the despondency which is so characteristic of bad cases, such as that of Mr. T.

Having now referred to the mental symptoms most common in, and most characteristic of, neurasthenia as a whole, we next have to consider the differentiation of the several varieties, or grades, of neurasthenia attended by mental aberration. These, as you are now aware, are three in number, and I have submitted to you a case illustrative of each of them. These different conditions doubtless pass imperceptibly one into the other, and thus one meets with instances which are hard to place; but by taking a general view of the case and carefully investigating not only the patient's present condition but also his previous and family histories, it is, in my belief, always possible to locate it in one or other of these groups. This is a matter of some importance, as the prognosis and mode of dealing with the case differs considerably in these different groups. But the question, I must admit, is sometimes a little difficult, and I think therefore it would be well to present the diagnostic features belonging to typical examples of each of these several varieties in a tabular form (Table IV. below).

I. — In CEREBRO - SPINAL NEURASTHENIA the mental symptoms are only a part, sometimes a minor part, of the case; and the evident bodily symptoms indicate the variety of the malady we have to deal with. It is unnecessary to make any further reference to the differentiation of this variety.

II.—In CEREBRAL NEURASTHENIA we find, in a typical manner, the mental symptoms (those namely in Group A) which I have just been describing. Such bodily symptoms as are present consist chiefly of weakness and prostration, and they are overshadowed by the mental condition. The family history is usually free from any definite insanity, and the previous history of the patient not infrequently contains a record of former attacks of neurasthenia. The patient will readily recover under appropriate measures. Sometimes the attack passes off without treatment, for one of the most characteristic features of this condition is its transitory nature.

III.—NEURASTHENIC INSANITY is in reality an exaggerated degree of the foregoing, and presents an *extreme degree of mental weakness*. It might be described as a condition of amentia, belonging for the most part to Group A, sometimes to Group B, but differing from Group C in that there is no *active perversion* of the mind. Let us consider, for a moment, what are the features of this mental condition, and how it differs from true insanity.

Insanity of the kind well known to alienists may of course arise as a complication, in the course of neurasthenia, or may succeed that disease, with or without an interval of apparent recovery. However, by neurasthenic insanity I do not mean this, but a form of mental disorder which in my belief is special to neurasthenia. To the casual observer this may perhaps not differ very much from ordinary insanity. But at the Infirmary and elsewhere I have met with a considerable number of cases of this form of mental disease, and it has seemed to me to differ from true insanity in six respects.

(1) The marked bodily weakness which precedes and accompanies the mental disorder.

(2) The curability of the condition under appropriate measures, after a duration of a few weeks or months.

(3) The most prominent feature of the mental condition is mental weakness. Delusions and hallucinations, as a rule, are absent.

(4) It is difficult to make it correspond with any of the types of insanity found in asylums.

(5) The mental symptoms vary from day to day, and the patients have distinctly lucid intervals from time to time, during which a casual observer might find nothing wrong with them.

(6) The family history is free from any cases of definite or chronic insanity.

The differential features are referred to in this table (Table IV.), but it will be advisable to consider these

ASSOCIATED WITH NEURASTHENIA FROM TRUE INSANITY.

	I.—CEREBRAL NEURASTHENIA.	II.—NEURASTHENIC INSANITY.	III.—TRUE INSANITY.
Family history.	Family history free from true insanity. Parents often alcoholic or consumptive.	Family history of "oddity," originality, or even genius; or of cases of temporary aberration of mind (neurasthenic insanity), hardly sufficient for asylum treatment; not of true insanity.	Family history of definite insanity, or relatives in asylums.
Previous history and causation.	History of antecedent neurasthenia, due very often to over-work of the mind, worry, or severe grief; sometimes alimentary derangement.	As in I. Often history of losing weight for some time. May have had slighter symptoms of same kind before. Causation as in I.	Attack may come on in a person apparently in perfect health; and there may be apparently no determining cause.
Physical condition.	Physical condition always below par, often extremely so; sometimes with alimentary derangement. Puberty and the menopause are very favourite epochs for advent of attacks.	As in I.	Physical condition may be normal, or even plethoric.
Other symptoms.	Other evidences of neurasthenia and symptoms of exhaustion.	Other evidences of neurasthenia. Aspect presents nothing peculiar beyond exhaustion.	No other evidences of neurasthenia. Aspect of patient often very characteristic.
Mental symptoms.	Deficient Memory *always* present, and inability to concentrate the Attention. These speedily become restored as patient gets better. Some of the other mental symptoms in Group A[1] may be present.	Characteristic deficiency of Memory and Attention. Mental symptoms belong generally to group A, occasionally group B.[1] They do not usually *correspond* with the type in group C.[1] They may *resemble* one of these types at one time, and then they resemble other types at another, and so on.	Memory may be perverted, or it may be unaffected. Mental symptoms correspond with one of the types described by alienists, and given in groups B and C.[1]
Treatment.	Cure depends on rest and alimentation; and takes place speedily in proportion to the completeness of these. Restraint never necessary.	Generally curable in the course of a few weeks or months under measures adopted for I. May require removal from friends; but restraint or asylum treatment is seldom or never required.	Restraint in an asylum generally necessary.

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[1] Groups referred to in the foregoing classification of mental disorders.

differentiating features somewhat more closely, with special reference to the case of Mr. T——, as being a typical case of "neurasthenic insanity."

(1) The physical weakness which accompanies these cases is always a notable feature. In narrating the case of Mr. T—— I dwelt chiefly on the mental changes, but you will remember that these were preceded and accompanied by great bodily weakness. As improvement took place one could almost prophesy the amount of mental progress by knowing the distance he could walk without fatigue; the mental improvement took place in such exact proportion to the physical. In addition to the general debility, many of the other bodily symptoms of neurasthenia, which we have already considered (Lecture II.), are also present.

(2) As regards curability under appropriate measures, no one who saw the case of Mr. T—— could fail to be impressed with its apparent hopelessness; and had I not, in the infirmary, seen cases having the features of "neurasthenic insanity" recover under equally adverse circumstances, I should certainly have given an unfavourable prognosis. There were five untoward features in his case. *First*, his age, for we know that ordinary insanity coming on at 65, almost invariably drifts into chronic dementia. *Secondly*, the marked heredity, a feature which governs, more than anything else, the prognosis of ordinary insanity. It was only late in the history of the case that I learned sufficient details to enable me to form the opinion that the illnesses of the relatives also belonged to the category of neurasthenic insanity. *Thirdly*, the slow and gradual advent of the illness, through a period of five years, separated at first by long intervals, but each attack becoming more enduring than the previous one. *Fourthly*, the presence and a history of marked arterial sclerosis. Upon making careful enquiries, I found that this patient had been subject for twenty years to symptoms (giddiness, palpitation, &c.) which could only be explained by the existence of arterial sclerosis through this long period of time. We know, moreover, that this condition markedly impairs the nutrition of the organs, and of none more than the brain. *Fifthly*, the history of recent syphilis, acquired at the age of 59. This was the least

unfavourable element, for he had hardly any serious symptoms consequent upon the malady. Nevertheless, we know how seriously this poison affects the nervous system generally. Against all these unfavourable symptoms there was hardly one which, on the other hand, could be regarded as hopeful, until, in due time, his response to remedies produced a palpable improvement.

As regards the means to be employed, these should be directed mainly to improving the physical condition, in the manner we have already considered.

(3) The most prominent feature about the mental condition in neurasthenic insanity is mental weakness, it is in short, a condition of amentia. The mind at first shows one or other of the defects in group A in the table of mental disorders, but by degrees, in these severe cases, it becomes a complete blank. Indeed, the chief danger in such cases is lest they should become chronic dements. This was so in the case of Mr. T——, the only mental symptoms, besides this amentia, being an exaggeration of certain normal defects in his character, which became emphasised owing to the want of the habitual control. With this exception, and the *very natural* remorse he felt for his own misdeeds, all the qualities of the mental condition in this case were negative, purely negative.

(4) If we except the term dementia, the names in current use amongst alienists are not descriptive of these cases. You will remember that two physicians, both men of large asylum experience, were unable to bring the case of Mr. T—— into any of the recognised groups of insanity under which they were accustomed to classify asylum insanity. One suggested "melancholic stupor," another "sub-acute dementia," as a possible appellation; and the latter of these seems to be the only term which at all described it. Yet, to all intents and purposes, it was insanity. The view I took of this patient's case was this:—He had previously been the subject of attacks of mental and bodily "depression," which corresponded in all respects to cerebro-spinal neurasthenia. Finally, in the illness we dealt with in detail, one of those attacks passed imperceptibly into insanity, and therefore I would suggest that such a case should be called "neurasthenic insanity."

(5) The variability of the mental symptoms, and the occurrence of lucid intervals, is another feature in neurasthenic insanity. If on rare occasions they do resemble any of the types of insanity, such as mania, melancholia, or General Paralysis, that type is constantly shifting from hour to hour or day to day. The case may resemble mania at one moment, melancholia the next, then again mania, developing in turn the grandiose ideas of General Paralysis. A case I well remember had one morning all the depression of melancholia; in the afternoon he became cheerful and self-assertive, as would a general paralytic, saying, "I will have you know that if I wish to go and see my uncle I will do so, for no one on earth is strong enough to stop me." In the evening he became fairly intelligent and cheerful; and the next day his mind again was a blank. Delusions are not as a rule present, but if so they have reference to some previous occurrence, as in Mr. T——'s case, who had delusions of persecution based on his previous misdeeds. They have a reality, therfore, which is only half unreasonable; they are not wholly delusions. Hallucinations are rare.

(6) Given sufficient time and opportunity to make the necessary inquiries, a very important distinction can be drawn between the family history of actual insanity on the one hand, and a family history of neurasthenic insanity on the other. You will remember that in Mr. T——'s case there had been no definite or chronic lunacy in the family, but several of its members had been eccentric and neurasthenic. Whereas there is often no history of definite insanity in the family of a neurasthenic patient, the members of the family may have been "odd," "eccentric," or "peculiar"; and they may have suffered from transient attacks of neurasthenia or neurasthenic insanity, for which it has not been necessary to place them under restraint. Such cases as I refer to do not, as a rule, go to the asylum; they are either retained at home by their friends or in the workhouse until they recover. Perhaps that is the explanation of the omission of the subject from books on lunacy.

In conclusion, gentlemen, you will have gathered that cerebro-spinal neurasthenia, cerebral neurasthenia, and neurasthenic insanity differ amongst themselves less in kind than in degree, according to the relative preponderance of the mental and physical symptoms. Their differentiation is not a matter of such great moment, for their treatment is much the same, and their prognosis depends on many of the same conditions. But the diagnosis of neurasthenic insanity from true insanity is a much more important matter on practical grounds. It may be said that I am attempting to draw a distinction where none exists. But I have not come to these conclusions suddenly; they are the result of mature deliberation and observation. I am, however, quite prepared to admit that the differentiation of these conditions is not always easy. Without careful investigation it may be impossible; but with full information before us I believe we can come to a correct conclusion, in at any rate the majority of cases.

It will be desirable to briefly refer to the *prognosis* and *treatment* of the mental affections met with in association with neurasthenia, for it is in their amenability to adequate treatment, at any rate in the early stages, that these three neurasthenic mental conditions differ from true insanity more widely than in anything else. You will remember that the little girl suffering from an attack of cerebral neurasthenia was well in a fortnight, although the mental disturbance was really very considerable. Practically nearly all neurasthenic cases recover. Mr. T——'s case, which was an exceptionally severe one, was prolonged to many months, though he ultimately recovered in spite of what seemed to be the most adverse circumstances. Some cases of true insanity recover, undoubtedly; but on the other hand, many if not most of these patients spend the greater part of their lives in asylums.

The prognosis of cerebral neurasthenia was discussed with the other forms of neurasthenia (Lecture II.), for it is guided by the same rules as these. It remains only to say a few words concerning the *prognosis of neurasthenic insanity*. Now, there are three possible events, which in order of frequency are as follows:—

1st,—Recovery; and this may take place even after a very prolonged course, as we have seen. Practically, as I have just said, the major portion (speaking from memory about nine-tenths) of the cases I have met with have terminated in this way.

2ndly,—In a few cases, all of which have been advanced in years, the mind fails to recover; all the faculties slowly deteriorate, and a condition of dementia gradually supervenes.

3rdly,—Death may occasionally ensue either from progressive asthenia, or more often from some intercurrent malady to which their lowered vitality renders them liable. The most frequent of these perhaps is a low form of pneumonia.

The first and most important question in the prognosis relates to the family history. If this be free from mental disease of any kind, if the ancestors of the patient were long-lived, and moreover if his previous history be free from any illness which leaves damaging effects behind it; and finally, if the age of the patient be moderate at the advent of the disease, a favourable outlook is justified. Cases which come on slowly usually run a prolonged course. If the disease has lasted a considerable time, either for want of treatment or for any other reason, it is generally slow to yield. This, gentlemen, is almost an axiom in all varieties of mental disorder, and it certainly comes into operation here; for you know that nerve impulses tend to travel along paths of least resistance, and every time an impulse travels along a certain path, the resistance becomes less, and thus abnormal or vicious paths become established when the disease has lasted long. If on the other hand a patient comes under treatment early, and responds readily to it, the prospect is good, however unfavourable matters may seem. The presence of arterial hyper-myotrophy, or arterial sclerosis, does not appear, if one may judge by the case I narrated and others I have seen, to be such a serious matter as one would think. On the other hand, many of the cases complicated by atheroma which I have met with have drifted on into dementia; though even here one should not hazard an unfavourable prognosis until the powers of assimilation, and the efficacy of treatment, have been ascertained.

The *treatment* of neurasthenic insanity need not detain us very long. All that has been said on the treatment of the other forms of neurasthenia applies equally here, excepting this important addition, that the patient must, at the earliest possible moment be isolated from his friends. There must be no communication, either by interview or by letter; and the sooner the patient is removed from anything which reminds him of his work or his domestic worries, the sooner will he recover. In a large proportion of cases the pathology of neurasthenic insanity resembles that of post-febrile delirium, or as it is sometimes called, post-febrile insanity; they are both essentially conditions of cerebral malnutrition. To this there may be added, in Toxic Neurasthenia, cerebral dystrophy, and in the Fatigue and the Emotional varieties, exhaustion.

The indications, therefore, are rest with a carefully regulated diet, massage, tonics, and sedatives, as may be necessary. One point which has often struck me is that these cases seem to bear opium, bromides, and other narcotics much better than ordinary insane persons do. Attention must of course be paid to the condition of the primæ viæ, and to any dyscrasia which may be present, such as syphilis. In less severe cases a change to the sea-side, or some bracing mountain district, with some friend or relative who is agreeable to the patient, may be sufficient. But in other cases it is desirable to place the patient in the house of, and under the care of, a medical man, for these cases generally require constant medical supervision. I have seen valuable time lost, and even still more disastrous results ensue from relatives—who had formed the opinion that "nothing but a thorough rest and change" was needed—taking the matter entirely into their own hands. In other cases there has been every reason to believe that the daily watchful care of a skilled medical attendant has restored the mind of a case which at one time appeared hopeless.

One of the reasons why I have attached so much significance to the diagnosis of neurasthenic insanity is to avoid the certification and removal to asylums of such cases. One of the characteristics of these cases, as I have before remarked, is their variability from day to day, and lucid intervals are frequent. A gastro-intestinal upset, the receipt of a letter, or even a more trivial cause, will determine a relapse. On the other hand after a good night's rest, a brisk purge, or without any apparent cause the patient will become reasonable and altogether intelligent. Now to find himself, at such times, in contact with a number of insane persons is the worst possible thing that can happen to the patient. I well remember two young women who were admitted some years ago to the workhouse lunacy wards about the same time, who presented a most remarkable similarity in their cases in all respects, the family history in both being free from insanity. One was transferred to the infirmary and made a speedy recovery; the other, for reasons which I need not now mention, was certified and sent to an asylum, where she afterwards became hopelessly insane. I had good reasons for believing that the result in this case was due to the effect of her surroundings upon her.

But, finally, gentlemen, if after exhausting all our resources, or in those rare cases in which restlessness passes into uncontrollable violence, restraint should become absolutely necessary, there are as you know six methods for the certification and removal of insane persons to an asylum.

(1) A reception order by Petition.
(2) An Urgency order.
(3) An order after Inquisition.
(4) A Summary reception order.
(5) An order of the Commissioners.
(6) A Pauper Certification and order, which is applicable to paupers, or those who for purposes of the Act come under that designation; or are lunatics wandering at large.

One of the first two methods is applicable to private patients. For the first method the next of kin makes out a petition and statement of particulars, two doctors certify separately, and a justice makes the order. In the second, the next of kin and one doctor, who certifies, take the law into their own hands, and the patient can be forthwith removed to an asylum; but this order is valid only for seven days. Before that time has elapsed one of the other orders must be made for the valid detention of the patient. These are the two most usual processes, but it is surprising how often method number 6 is made use of, now that it is known that it does not necessarily pauperise the patient. If this method is adopted, the relieving officer of the district is the proper person to apply to. He keeps all the necessary printed forms as prescribed by the Lunacy Act. In actual practice, gentlemen, if you find yourselves in difficulty at any time, the relieving officer can generally afford you valuable aid, no matter what process of law is adopted for the incarceration of your patient.

ADDENDUM.

VIEWS OF AUTHORS ON THE NATURE OF NEURASTHENIA. BIBLIOGRAPHY.

By Agnes Blackadder, M.B.

Summary:—*Various terms which have been applied to a condition resembling neurasthenia.—Views of Beard and other authors as to the nature of neurasthenia.—Traumatic neurasthenia, views of authors as to its nature and origin.—Bibliography.*

Throughout medical literature from the time of Galen we find endeavours to describe certain nervous troubles which, distinct even from the milder forms of hysteria and insanity, yet by their fleeting nature eluded positive definition. Cases presenting many of the features of neurasthenia have at different times been described under the following names: Affections vaporeuses (Panum), hystéricisme (Louzer-Villemay), nevrose protéiforme (Cerise), nervous debility, nervous hyper-excitation, nervous fever, general hyperæsthesia (Monneret), general neuralgia (Valleix), depressive form of spinal irritation (Rosenthal), neurospasmia (Brachet), nervosism (Bouchut), nervous state (Sandras), nervous malady (Brochin), nervous wasting, cerebro-cardiac neuropathy (Krishaber), cerebro-gastric disease (Leven), acute cerebro-gastric neuropathy (Girard), nervous cachexia, maux de nerfs (Huchard), topoalgia (Blocq), rachialgia.

Beard of New York was the first, in 1868, to bring order into this chaos, by connecting these symptoms with one another, and grouping them under the name neurasthenia. In 1880 he published his views in book form, and under the name neurasthenia, or nervous exhaustion, he described and differentiated a condition which up to that time had been confused with other diseases, and referred to under a varying nomenclature. The primary factor in the causation of neurasthenia, in Beard's opinion, was Over-Civilisation. This disturbs the balance between nerve waste and repair, and results in a weakened and unstable nerve-force. With this weakened nerve-force comes excessive irritability, direct and reflex, local and general. The three chief centres of irritability are the brain, the digestive and the reproductive systems. The various symptoms of neurasthenia are due to reflex irritation through the sensory, motor, and sympathetic or vaso-motor nerves. The cardio-vascular system being so largely supplied by nerves is the first to be acted upon by reflex irritation; consequently, it is in a condition of abnormal instability, with a tendency to dilatation or local hyperæmia. In asthenopia, for example, there are distressing symptoms without any objective changes discoverable, other than a local hyperæmia. Beard considers it probable that local hyperæmia of the various parts of the body will account for all the symptoms in neurasthenia. Could we but examine them, we should find hyperæmia of the brain and membranes in the neurasthenic headache, of the cord in "irritable spine," and so on. As the same amount of local hyperæmia would, in a healthy person, give rise to no symptoms, he insists on the vaso-motor changes being subsequent to derangement of the central nervous system.

With regard to dyspepsia in neurasthenia, Beard says it may precede, accompany or follow other neurasthenic symptoms. In those cases where it precedes other symptoms Beard holds that the nerves governing the stomach are the first part of the nervous system to yield; just as, in another individual, the first to yield may be the spine or brain. In support of this view he claims that nervous dyspepsia can be diagnosed from the dyspepsias of local origin by their coming and going without cause, by the symptoms being worst when the stomach is empty, and by their recovery under drugs, such as bromides, which have no direct action upon the stomach.

In 1885 *Glénard* published an important work in which he attributed neurasthenia to a condition of Enteroptosis or prolapse of one or other of the abdominal viscera. He proposed a classification of the symptoms of neurasthenia into four groups :—(1) Asthenic, *e.g.* debility, and lassitude ; (2) Mesogastric, *e.g.* sensations of uneasiness, weight, dragging, craving, emptiness, etc. ; (3) Gastric ; (4) Nervous. The symptoms of the malady, he maintains, in all cases appear in that order, *i.e.* asthenic, mesogastric, gastric, and nervous. In advanced cases gastric splashing, or evidences of prolapse of an organ are readily elicited ; but even in cases where physical examination reveals no abnormality Glénard asserts that the asthenic and mesogastric symptoms in neurasthenia point to a local origin—the former to laxity of the abdominal wall, the latter to prolapse of an abdominal organ. Because of its abdominal origin, neurasthenia never occurs without dyspeptic symptoms either apparent or latent. A committee was appointed to investigate the matter; and in 1886 M. Féréol published a report which, while placing high value on the researches of Glénard, adverted to the fact that there may be prolapse of the viscera without neurasthenic symptoms, and on the other hand, advanced neurasthenia without gastric symptoms. He came to the conclusion that Glénard was not justified in declaring Enteroptosis to be the more scientific definition of the condition known as neurasthenia.

Arndt (1885) held that in neurasthenics there was a defective development of the nervous system, and very frequently a concurrent defective condition of the blood. Under the term neurasthenia he includes almost every characteristic of the nervous temperament, from the discontented ambitious man to the man of genius, from the world-weary man of culture to the melancholic. As a critic in the Revue de Medicine (1887) expresses it, "Je pense que, pour Arndt, il n'y a que les stoiques, les impassibles qui ne soient pas neurastheniques." The primary factor in neurasthenia therefore, for Arndt, is a hereditarily degenerate nervous system.

Kowalewsky, basing his views on the physiological experiments in which nerve cells showed coagulation necrosis and vacuolation after prolonged peripheral irritation, considered neurasthenia to be due primarily to overworked nerve-elements, with their consequent defective nutrition and auto-intoxication from an excessive katabolism and insufficient anabolism. A general malnutrition ensues from defective tissue oxygenation, and the altered blood still further injures the nerve-cells. Hereditary neurasthenia is due to poisoning of the nervous system by the ptomaines of hereditarily defective processes of metabolism.

Von Ziemssen, in 1887, defined neurasthenia as a functional debility, affecting part or all of the nervous system, causing inefficiency of action in (1), the intellectual and psychical centres chiefly, or (2), the reflex and inhibitory centres, or (3), the paths of nervous conductivity. Certain nations show a wearing out of the intellectual energy; their young men become blasé, and lose enthusiasm and capability for work at an early age in comparison with those nations of more vigorous nerve power.

Charcot did for neurasthenia what he did for hysteria,—pointed out its essential symptoms. More than once in his Leçons du Mardi (1887-89) he remarks that neurasthenia due to overtaxing of the brain very rarely occurs under the age of 15 to 17. A child, when fatigued, spontaneously ceases to work; but an adult forces his weary brain to continue. The morbid fears and melancholy so often accompanying neurasthenia are not essential features of the condition; they are found only in patients with a neurotic heredity. He further insists on the recognition of neurasthenia amongst the working-classes—"l'hérédité nerveuse n'est pas l'exclusif privilège des grands de la terre." With physical fatigue, poverty, and the constant anxiety to make both ends meet, one finds a combination which is as potent a factor in the production of nerve-exhaustion as the purely brain work of professional or business men. The dyspepsia associated with neurasthenia is merely one of the symptoms, not a cause, of the malady. Charcot admits, however, that "certain forms of gastric dilatation are capable of producing diverse nervous symptoms."[1]

Paul Blocq, (1891) considers neurasthenia to be a cerebral weakness, a depression of intellectual energy, which, in the cerebral type of the disease, renders the sufferer incapable of concentration. To this diminished power of the brain to regulate the rest of the nervous system, can also be attributed all the other forms of the disease. Thus, in the spinal and sympathetic form, those functions which normally take place outside consciousness are no longer under cerebral control, and so give rise to the disagreeable sensations and pains which constitute the symptoms of neurasthenia. Local forms of neurasthenia may be explained as due to the abnormal prominence and persistence in consciousness of any sensation.

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[1] Leçons du Mardi à la Salpêtrière, 1887-8, p. 518.

Mathieu (1892) considers neurasthenia to be due chiefly to hereditary predisposition, and to overstrain of the central nervous system, by the various mental, moral and physical causes present in highly civilised states. The neurasthenic person has usually a neurotic family history, which may be manifested in three directions, namely, (1) the cerebral type — genius, idiocy, etc.; (2) the neuropathic type — hysteria, chorea, epilepsy, etc.; and (3) the arthritic group — rheumatism, diabetes, and gout. The symptoms of neurasthenic dyspepsia are usually due to atony of the stomach and intestine; and half an hour or so after meals the abdomen becomes distended. The cardiac irregularity, sensations of fulness, and flushing of the face, are not symptoms of dyspepsia alone, but are due in great part to the pushing up of the diaphragm by the distended intestine. There may be constipation alternating with diarrhœa; in severe cases there may be mucous or membranous enteritis. Such symptoms are explained by the neuro-muscular weakness of the alimentary canal. Mathieu criticises the theory of *Bouchard*, that neurasthenia is due to auto-intoxication in cases of dilated stomach. Bouchard's clinical methods of diagnosis he does not consider reliable. Again, Mathieu has seen many cases in which neurasthenia and dyspepsia came on simultaneously; but to prove auto-intoxication to be a cause of neurasthenia it would be necessary to prove that dyspepsia preceded neurasthenia. Mathieu admits, however, he is not in a position to prove that the dyspepsia does not occur first in some cases. On the other hand, cases with prolonged histories of gastric dilatation often exhibit no nervous symptoms.

Erb (1893) speaks of "the increasing nervousness of our times," of which neurasthenia is the most common form. There is a disturbance in the nutrition of the nerve elements, occurring more especially after mental over-work, emotional overstrain, or a combination of those two factors. In other cases only a physical cause is present; of such the chief are muscular over-exertion, sexual excesses, convalescence from fevers and influenza, and the abuse of alcohol, tea, or tobacco.

Löwenfeld (1893) considered that the conditions of physiological fatigue must be better understood before we can satisfactorily explain neurasthenia. In health the nerve-tissues are repaired during sleep; but in neurasthenia the balance is not made up during sleep. The condition of the brain being so dependent on its blood-supply, as evidenced by the exhaustion or even unconsciousness consequent on hunger or hæmorrhage, it is possible that a chronic cerebral exhaustion is due to a defective development of the cerebral vessels.

The term TRAUMATIC NEUROSIS is employed to express any functional nervous condition arising after an accident. The three forms usually met with are, hysteria, neurasthenia, and hystero-neurasthenia. In Charcot's experience the last-named was the most frequent; Löwenfeld in Germany found neurasthenia more common, and was the first to show that Traumatic Neurasthenia differed in no way, excepting in its cause, from the recognised form of neurasthenia. Various opinions are held as to the origin of Traumatic Neurasthenia; some ascribing its origin chiefly to the mental, others to the physical, effects of the accident.

Charcot considered the mental factor the more important; the accident was merely an exciting cause in an individual already predisposed to nervous disturbance. Hence in different persons neurasthenia, hysteria, epilepsy, chorea, or even paralysis agitans may develope after traumatism.

Erichsen argues that, although the pathology of the primary effects of railway accidents is uncertain, the secondary effects are of an inflammatory character, because of their correspondence with those symptoms known to be due to chronic meningitis and subacute myelitis of the cord.

His arguments are severely criticised by *Page*, who considers that the cord is so thoroughly protected that it is very rarely injured. He suggests that in the severer cases the general lowering of health consequent on an accident may permit the more rapid development of a pathological process, already started, that would otherwise have remained latent.

Ziemssen's Cyclopædia concludes a summary of the various theories by stating the most probable one to be that "which supposes only molecular changes in the finer nerve-elements to have occurred, giving rise either to an immediate and complete functional paralysis of the latter, or forming the commencement of further disturbances of nutrition, which at a later time may result in degenerative inflammation."[1]

Vibert, who had a wide experience in accidents, considers too much stress has been laid on the mental effect of terror. It is true that in highly neurotic persons trifling injuries may be followed by grave symptoms; but, in such cases, there is probably a predisposition to nervous derangement. It is equally true that in other cases persons who have been greatly terrified develope no neurasthenic symptoms; and on the other hand, those who do develope such symptoms have often shown no terror at the time of the accident. Moreover, how comes it that neurasthenia is developed so commonly after explosions, carriage or railway accidents, and so rarely after other classes of accidents, (such as knife injuries, attempted strangulations, etc.) equally productive of terror? This admits of a ready explanation when we remember that in the former class of accidents there is often serious "commotion" of the nervous system; and on closer examination we find those are the worst cases in which there is a history of blows upon the head or spine. Thus a "commotion" not sufficient to cause a gross lesion, may yet be sufficient to cause a molecular disturbance with symptoms of a "traumatic neurasthenia."

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[1] Ziemssen's Cyclopædia, vol. xiii., Eng. Trans.

A LIST OF THE MORE IMPORTANT CONTRIBUTIONS ON NEURASTHENIA.

Beard	Boston Med. and Surg. Review	April, 1869
Krishaber	De la névropathie cérébro-cardiaque	1873
Conrand	De la névropathie cérébro-cardiaque	1873
Peter	De la névropathie cérébro-cardiaque (Trousseau clinique)	1874
Arndt	Uber Neuropatische diathese (Berl. Klin. Woch.)	1875
Beard	Certain Symptoms of Neurasthenia (Virginia M. Month., Richmond)	1878
Rosenthal	Forme dépressive de l'irritation spinale (Traité clinique des maladies du système nerveux)	1878
Brochin	Art. maladies nerveuses du Dict. Encyl. des Sci. Med.	1878
Beard	Neurasthenia as a cause of Inebriety (Quart. J. Inebr., Hartford)	1879
Beard	Other Symptoms of Neurasthenia (Chic. Journ. Ment. and Nerv. Dis.)	1879
Beard	Cases of Neurasthenia (St. Louis Med. and Surg. Journ.)	1879
Dowse	On Neurasthenia and its treatment (Proc. Med. Soc., London)	1879-81
Beard	The nature and diagnosis of Neurasthenia (New York Med. Journ.)	1879
Möbius	Ueber Neurasthenia Cerebralis (Memorabilien Heibr.)	1879
Jewell	Varieties and causes of neurasthenia (Journ. Ment. and Nerv. Dis., Chicago)	1880
Weir-Mitchell	Neurasthenia, Hysteria, and their treatment (Chicago Med. Gazette)	1880
Beard	Neurasthenia (New York)	1880
Beard	Neurasthenia, with cases of sexual neurasthenia (Maryland Med. Journ., Balt.)	1880
Beard	The symptoms of sexual neurasthenia (Independ. Pract., Balt.)	1880
Beard	The sequences of Neurasthenia (Alienist and Neurologist, St. Louis)	1880
Beard	The Traumatic Neurasthenia (N. Eng. M. Month., Newton, Conn.)	1881
Huchard	De la Neurasthénie (Union Méd., Paris)	1882
Playfair	Systematic Treatment of Aggravated Hysteria and certain allied forms of neurasthenia (Brit. Med. Journ.)	1882
Weir-Mitchell	Fat and Blood (with treatment of Neurasthenia)	1883
Landouzy	Progrès Medical	Sept., 1883
Möbius	Zur lehre von der Neurasthenie (Centralbl. für Nervenkr., Leipzig, vi.)	1883
Axenfeld and Huchard	Traité des névroses	1883
C. Allbutt	Visceral Neuroses	1884

Le Gros Clark .. Remarks on Nervous Exhaustion and on Vasomotor action (Journ. of Anat. and Physiol., London) 1883-4

F. Richter .. .. Die Neurasthenie und Hysterie (Deut. Med. Ztg., Berlin) .. .. 1884, i.

Ewald.. .. .. Die Neurasthenia Dyspeptica (Berlin Klin. Woch.) 1884

Jahn .. .. .. Ueber Behandlung von Neurasthenien (Deuts. Med. Zeit., Berlin, ii.) 1885

Kowalewski .. .. Neurastenija i patophobija (Archiv. psych. Charkon, vi., pt. 3. *Also*—Centralbl. f. Nervenh., Leipzig, 1887, x.) 1885

P. Berger .. .. Die Nervenschwäche (Neurasthenie); ihre Wesen, ihre Ursachen und Behandlung—(Berlin) .. .. 1885 and 1886

Strahan .. .. Puzzling Heart Conditions dependent on Neurasthenia (Brit. Med. Journal).. 1885

Arndt .. .. .. Die Neurasthenie, etc. (Berlin) 1885

Glénard .. .. Application de la méthode naturelle à l'analyse de la dyspepsie nerveuse. De l'entéroptose (Lyon Médical) 1885

Glénard .. .. Soc. Méd. des Hôpitaux .. .. .. Dec., 1886

Glénard .. .. L'entéroptose (Sémaine Médicale) .. May, 1886

Howell .. .. On Some Conditions of Neurasthenia (London) 1886

Playfair .. .. Observations on what is called Neurasthenia (Brit. Med. Journal) .. .. .. Nov., 1886

Rosenbach .. .. Neurasthenia Vasomotoria (Breslau Artzl Zeitsch.) 1886

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Grasset .. .. Traité pratique des maladies du système nerveux 1886

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Lafosse .. .. Etude clinique sur la céphalée neurasthénique (Thèse de Paris) 1887

Löwenfeld .. .. Die moderne Behandlung der Nervenschwäche (neurasthenie) der Hysterie und Verwandter Leiden (Wiesbaden) 1887

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Kraft-Ebing .. .. Wien. Med. Presse, No. 5, p. 161 1887

Ziemssen .. .. Neurasthenia and its treatment (Klin. Wort., *translated* New Syd. Soc., 1894) 1887

Glénard .. .. Un cas de Neurasthénie gastrique (Province méd., Lyon) 1887

Lemoinne .. .. Path. et Traitement de la Neurasthénie (Ann. méd.-psychol.) .. .. Sept., 1888

Berger.. .. .. Die Nervenschwäche, ihre Ursachen und Behandlung 1888

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Mathieu .. .. Prog. Méd. .. .. July, 1888

Wilhelm .. .. La neurasthenie, sa marche et sa guérison .. 1889

Trastour .. .. Les déséquilibrés du ventre (gastro-entéroptose neurasthénie) 1889

Bordaries	Contribution à l'étude de la neurasthénie	1890
Monier	Des troubles gastriques dans la neurasthénie (Thèse de Paris)	1890
Bouveret	La Neurasthénie (Paris)	1890
Blanc Champagne	Etude pathogénique et thérapeutique sur la dilatation de l'estomac et sur son influence dans la neurasthénie (Thèse de Paris)	1890
Loh	Die Neurasthenie und ihre Behandlung (Wiesbaden)	1890
Charcot	Leçons du Mardi à la Salpêtrière	1888-90
Levillain	La neurasthénie	1891
A. Clausse	Contribution à l'étude de la neurasthènie (Paris)	1891
Paul Blocq	Neurasthénie Monosymptomatique (Gaz. Hebd. de Méd. et de Chir.) May and June,	1891
Régis	Les neurasthénies psychiques (Journ. de Méd., Bordeaux)	1891
P. Brauns	Die Neurasthenie, etc. (Wiesbaden)	1891
Grasset	Quelque cas d'hysterie male et de neurasthénie (Montpellier Medical) May and June,	1891
Blocq	Neurasthenia (Translation)—Brain, vol. xiv.	1891
T. S. Dowse	On brain and nerve exhaustion, etc. (London)	1892
Pitres	Sem. Med. p. 400 (Paris)	1892
E. Emmel	Neurasthenie, etc. (Freiwaldau)	1892
C. Paul	Traitement de la neurasthénie par la transfusion nerveuse (Bull. Acad. de Méd., Par.)	1892
Goodhart	Common neuroses (London)	1892
A. Mathieu	Neurasthénie (Paris)	1892
P. Weill	Des neurasthénies locales (Nancy)	1892
Kowalewsky	Centralbl. f. Nervenh. u. Psychiat., Coblenz and Leipz., n. F., iv., 113	1893
Hösslin, etc.	Handbuch der neurasthenie (Leipzig)	1893
R. Saundby	Clin. J., London, i., 49	1892-3
Robinson	Electro-therapeutics of Neurasthenia (Detroit)	1893
Lefèvre	Les neurasthénies d'origine toxique (Ann. de Psych. et d'hypnol., Par.)	1893
W. and G. Tyrell	Nervous exhaustion; its causes, outcomes and Treatment (London)	1893
Hedley	The Insomnia of neurasthenia (Lancet) June,	1893
Löwenfeld	Pathologie und Therapie der Neurasthenie und Hysterie (Wiesbaden)	1893
Vigoureux	Neurasthénie et Arthritisme (Paris)	1893
Dercum	Treatment of Neurasthenia (Therap. Gaz. Detroit)	1893
Evans	Neurasthenia treated with Nerve Extract (Brit. Med. Journ. ii.)	1893
Ballet	Sem. Méd., Par.	1893
Rauzier	Sem. Méd., Par.	1893
C. Paul	Bull. gén. de thérap., etc., Par...	1893
F. Boissier	Essai sur la neurasthénie, etc. (Paris)	1894
Ausset	Gaz. hebd. de méd., Par...	1894
R. Browne	Neurasthenia and its treatment by hypodermic transfusions (London)	1894

Kothe	Das Wesen und die Behandlung der neurasthenie (Jena)	1894
A. Hally	Contribution à l'étude de la cephalée des Neurasthéniques (Nancy)	1894
Dejérine	Compt. rend. Soc.de Biol., Par.	1894
Discussion	Brit. Med. Journ., ii.	1894
Mesnard	Gaz. hebd. d. sci. méd. de Bordeaux, xv., 556	1894
(also)	Ann. de la Policlin de Bordeaux, iii., 110, 215	1893-4
Rockwell	Internat. clin., Phila., 4, s. iii., 151	1894
J. Grandclément	Essai sur la Neurasthénie (Lyon)	1894
C. Darroux	Des rapports de la neurasthénie avec l'artériosclérose (Bordeaux)	1895
Sweeney	Relation of intestinal irritation and absorption to neurasthenia (Northwest. Lancet, St. Paul, xvi., 46)	1896
M. Deutsch	Die Neurasthenie beim Manne (Berlin)	1895
F. Gallard	J. de méd. de Paris, 2. s., viii., 110	1896
G. Herschel	Med. Times and Hosp. Gaz., London, xxiv.	1896
F. Levillain	Essais de neurologie clinique (Paris)	1896
J. M. Bernuchon	Contribution à l'étude des hémorrhagies muqueses dans la neurasthénie (Bordeaux)	1896
Hilty	Ueber Neurasthenie (Bern.)	1897
A. Vial	Dégénérescence mentale et neurasthénie (Lyon)	1897
Ausset	Des Hémorrhages dans la Neurasthénie (Rev. de Méd., Par.)	1897
Giles de la Tourette	Revision nosographique des états neurasthéniques (Sem. Méd., Par.)	1898
Morel-Lavallée	Neurasthénie: psychose et dermatose vicariantes (J. de Méd. de Par.)	1898

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Oppenheim	Die traumatischen Neurosen (Berlin)	1889
Erichsen	Concussion of the Spine, Nervous Shock (London)	1882
Von Ziemssen	Cyclopædia, vol. xiii., Eng. Translation	
Page	Abuse of Potassium Bromide in treatment of Traumatic Neurasthenia (Med. Times and Gazette, London)	1885
Page	Injuries of the Spine and Spinal Cord (London)	1885
Charcot	Leçons de Mardi	1888-90
Schultze	Ueber Neurosen nach Trauma (Samml. Klin. Vort.)	1891
Hoffmann	Die traumatische Neurose (Samml. Klin. Vort., n. F., Leipz.)	1891
Freund	Die traumatischen Neurosen (Samml. Klin. Vort., n. F., Leipz.)	1892
Wichmann	Die traumatischen Neurosen (Braunschweig)	1892
Oppenheimer	Die traumatischen Neurosen (Berlin)	1891
Vibert	La névrose traumatique	1893
Strümpell	New Syd. Soc. Translation	1894
Horsley	Clin. Journ.	March 4, 1896

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ABBREVIATION.

Na stands for Neurasthenia.
Nic stands for Neurasthenic.

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